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THE FARMER AND PLANTER



PRICE, \$1 A YEAR, ALWAYS IN ADVANCE.

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VOL. X.

MAY, 1859.

NO. 5.

R. M. STOKES, }
PROPRIETOR.

COLUMBIA, S. C.

{ NEW SERIES
VOL. 1, No. 5.

BAREFOOTED NOTES ON SOUTHERN AGRICULTURE.

BY AN OLD GRUMBLER.

NO IV.

A month behind.—The pleasure of Grumbling.—Children and Fruit.—Squire Slip-down, Tom Theory, Dr. Hesitant, and Capt. Maximus Bluster—Clever Fellows—(N. B.—Mere mention, more anon).—Food for Thought.—Economy of Compost Manure—Its Miserable Preparation—Guano, a Fashion.—Superiority of Phosphatic Manures.—Progressive Improvement.—High-Flying.—The Elements of Vegetable Substances.—The Chemical Story of Decomposition.—The Great Chemist in Nature's Laboratory.—Suggestions.—Comparative Value of the Droppings of Animals.—Great Value of Cotton-Seed, both as Food and Manure.—The Planter's Advantages. Tearing up the Ground, &c.

We find that, upon the publication of our grumblings, they will usually be one month behind the time for practical application. This results from the fact, that we write down our every-day reflections, and, as they are seasonable with us, they consequently lose their proper period by waiting for publication. In this light, our articles will be as serviceable as backwoods newspapers are to readers who first enjoy an essay in the regular dailies of civilized life—just when they need refreshing on the subject, out pops the article again in the weekly. So, if we are not in time with timely hints, we claim the privilege to grumble, when, and about what we chose. We don't expect to be popular, and to catch the eyes of many readers; for they are all much of our estate—grumblers by nature, by habit, by pleasure. Oh! it is a pleasure to grumble, to snap and snarl, and make everybody uncomfortable. It is a satisfactory enjoyment, to poke quiet people in the ribs, tread on their toes, in a sly way, make them feel that

they are not half doing their duty, as good, industrious, energetic citizens. Besides the two weaknesses of a love for other people's children, and ripe fruit, these snarling pleasures are our failings.—They are the incidents of nature, attaching to humanity, heightened and irritated by concurrent circumstances, over which we have no control; and hence we have, perhaps wisely, adopted the determination not to allow these habits to interfere with our social pleasures, but to give vent to generated acrimony, in grumblings against those systems which are so mismanaged by our rural population. This determination will lead us always to contemplate quiet Squire Slip-down, elegant Tom Theory, Dr. Hesitant, and boisterous Capt. Maximus Bluster, all as very clever fellows, in their personal characters; but we will as inevitably pitch into their agricultural manners and customs, when they give room for even the echo of a grumble. It is our trade for the year, and we intend to make the monthly numbers of the "Grumbler" food for thought, if not for practice. Now, we might have said all this introductory matter when we commenced the series, but it was not our purpose to do so; and, without fear, favor, or affection, we intend to say everything pertinent to our purpose, in the manner and style which suits our notions best.

Next to stock, in the course of our plan for the permanent improvement of the fertility of the soil in the deteriorating planting States, is the proper economy of compost manure. Like home supplies of food for laborers, it is paid for in industry and energy. It does not reach into the pocket, nor does it abstract from the resources of the plantation. It acts strictly upon a self-sustaining basis, and is best appreciated, more valued, and more remunerative.

tive, wherever it is extensively indulged in. We shall not waste our paper in detailing the miserable practices resorted to for dissipating the elements of compost manures on plantations, for nearly every planter has his individual thriftless system, and though the details differ, the main operation is controlled by *the force of circumstances alone*. An indefinite amount of crude litter from the woods, pitched by cart or wagon loads into the stock-yards, saturated by the rains of Autumn and Winter, in February and March is hauled upon the land, and *expected to do the part of honestly-made compost manure*. It would be far better to haul the litter, in a dry state, immediately to the fields, and, by subverting it, ameliorate the condition of the soil, by this direct application of vegetable matter. In fact, on clay soils, there is no surer, safer, or readier mode of improving. Sandy soils, having no need of the pulverizing influence of vegetable matter, require a concentrated form of manure. Whilst we condemn the system of half-made compost, as expensive and valueless in the main elements required for the production of our crops, we can point out remedies by which the whole amount of fertilizers required on every plantation might easily be made at home.

Guano is a fashion, and like all others afflicting humanity, it is an expensive fashion. It is valuable, as an immediate productive stimulant; but its effects so frequently fail, from the vicissitudes of the seasons, that we conscientiously believe *its fashion* will wear out. The great objection to guano is, that it leaves no tangible impress upon the condition of the soil. A barren field manured with guano, to all appearance is a barren field forever. It blackens no red hills—it fills up no cankering gullies—it adds no consistency to shifting sands—it furnishes elements for the production of a single crop, and leaves only a trace of fertility behind.—The destiny, then, of guano is to produce a single crop, and unless economy and discretion in composting follow its use, it will prove ruinously extravagant. The phosphatic compounds, now used so largely by planters, have a more lasting fertility. The decomposed bones, claiming to enter largely into their composition, impart immediate fertility; and, differing from gaseous fertilizers abounding in ammonia, continue to yield nutrition until, by a slow process, they are entirely absorbed by the productions of the soil. Their fertilizing benefit running thus over several growing seasons, is more apt to be remunerative, and, after the first dose, each succeeding annual application might with reasonable certainty be decreased. The tendency of phosphatic manures to produce heavy crops of grass, and legu-

minous plants, adds vastly to the supplies of vegetable matter for subverting in a green state, or material for the compost heap. These are the advantages of fashionable commercial manures. Their disadvantages can only be brought home to the planters, by showing them how they can dispense with their use, in a great measure, and make more remunerating crops, because the home-made compost is a clear gain, costing no outlay but care and labor, and, by adding permanent fertility to their soils, adds capital to their landed interests. These are the great points to be gained, and when the principles and practice by which they are to be achieved, become fixed and appreciated in the routine of the planter's operations, then, and only then, will be the true dawn of our agricultural greatness. The gradual and progressive improvement of a country excites the admiration of surrounding peoples, and nations stop in their career of conquest to pay tributes to the fruitful genius of the soil—but, where poverty and barrenness invest the earth, it becomes the abode of discontented ignorance, and restless rapine holds uncontrolled dominion over its wastes.

Compost manure, strictly speaking, is the union of vegetable substances with the excrements of animals—both containing, in the main, similar elements. The animal excrements alone, would not be in a sufficient state of division to make their application practicable to the ordinary routine of tillage: hence, to furnish a basis for the preservation and general distribution of the fertilizing elements contained in these substances, vegetable matter is placed as a divisor, in the shape of beds for animals in the stables, and coverings for stock-yards, where they intercept and absorb the occasional droppings. Plants in a dry state, such as the leaves of trees, straw, hay, and vegetable substance, gleaned from fields, consist of *carbon, hydrogen, and oxygen*; a very small portion of *nitrogen*, and, perhaps, six parts in one hundred, of alkaline or earthy salts. The operation of a great vital principle, places these elements under a different arrangement with regard to each other, from that which their chemical affinities give them a tendency to assume. The combustion, on consuming vegetable substances by fire, is nothing more than a rapid and violent action of those affinities, in which oxygen plays the principal part. Heated to a certain degree, both the oxygen of the air and that contained in the substance, are brought into action; and the result is easily comprehended. The oxygen unites with the carbon, in the form of carbonic acid gas, and, with the hydrogen, to form water, while a small portion of hydrogen unites with

nitrogen to form ammonia, or passes off uncombined. Thus, we see carbonic acid gas the most abundant product, whilst water is next in quantity, and ammonia the least. These all escape as gases, and the ashes which remain after complete combustion, consist of some of the bases, or oxides, united with the mineral acids—as alkaline or earthy salts—differing and varying in quantity and constituent elements, relatively to the elements of the plants from which they are derived. These mineral substances, constituting an essential part of plants, are powerful fertilizing elements. The salts of potash, and the phosphates of lime and magnesia, are the most abundant, though *muriate* of soda (*common salt*) and sulphate of lime (*gypsum*) are also found in smaller quantities in vegetable bodies. This is the chemical story of decomposition; and it is stated in a style, we think, plain enough for the comprehension of the ordinary reader. It is the final dissolving of the elements of a plant, in a rapid manner, by a certain scientific process, reducing these elements to their natural adaptation for vegetable appropriation. The ordinary decay of vegetable substances, through the agencies of atmospheric heat and moisture, effects precisely the same results; and the same routine of decay and reproduction, has been ceaselessly operating since the creation of this globe. In the lurid glare of the Summer sunshine—in the murky, damp days of Spring and Autumn—in the cimmerian darkness of midnight—Nature, under the control of the Great Chemist, is forever at work, and from the alembic of her nourishing bosom, gives perpetual luxuriance and fertility, to vales and groves, untouched and untarnished by the hands of man.

It is the task of man to supply to his cultivated fields what nature supplies to the forest, by the universal law of vegetable decomposition; and it is our present aim to suggest the most practicable mode of doing this. Our recommendations consist not of the *most economical suggestions*—for this would involve a nicety which would be impracticable when applied to the mixed husbandry of the South—here, where time is so precious, and labor so dear. The most *economical* would involve economy in the preservation of every particle of material and element used, as well as other requisites, which, though minute, would not pay, if indulged in. The crude and small amount of fertilizing elements contained in vegetable substances, being too meagre to be practically available to the planter, he has to rely on the fertility contained in the excrements of his domestic animals. This is valuable in proportion to the food which they have consumed. Horses,

being fed liberally on grain, furnish deposits rich in fertility. Swine, whilst fattening, consuming almost entirely grain, furnish equally valuable droppings. Neat cattle, from their less liberal treatment, furnish manure of less value. The manure of sheep and goats, from their habits of browsing on twigs, and the coarser weeds, is of a permanent and valuable nature. Poultry, being fed on grain, and combining uric acid with their solid excrements, furnish a manure only surpassed by the purest guanoes.

In the consumption of vegetable and cereal food by animals, about one-half their weight, in a dry state, is given out, in breathing, through the lungs, or by perspiration from the skin, in a gaseous form, chiefly as carbonic acid gas and water, with traces of ammonia. The remainder, together with the dead matter of the animal organs, is rejected as dung or urine, except the portions appropriated by the animal economy in sustaining accumulative growth and fat. The solid excrement contains the woody fibre, the insoluble matter and salts, and the urine the more soluble substances and salts, rich in nitrogen. Neat cattle fed on good provender, such as hay, straw, and shucks, with a liberal allowance of cereal food, or oleaginous, in the shape of cotton-seed, will furnish a manure rich in all the essentials requisite for producing our main crops—and from its cool and incombustible nature, better suited to the intense heat of our climate than the richer products of the horse. The preservation of these elements, and their application, without waste to the soil, would, if persevered in, secure the fertility of every cotton plantation in the South.

The cotton-planter has not yet learned to value the fact, that he exports less of elements of fertility in the sale of his staple, than any other cultivator on the face of the globe. He does not value the fact, that all the grain produced, is consumed on the plantation—that his cotton-stalks furnish directly to the soil in which they grow, a valuable amount of vegetable matter, returned to the field by decay, in the course of cultivation, before the next crop is perfected—that the seeds of this plant, with their vitality destroyed, and by direct application, or as the enricher of manure, when fed to cattle, is the best fertilizer he can employ for every crop that he cultivates. In addition to all these, he has command of green crops for subverting, and, also, furnishing an abundance of forage for soiling domestic animals, which no other people know or enjoy. Why, then, does not the land fatten? Why do we still see old fields increasing, and crops growing smaller, on lands once the best

in the South? It is the greedy grasping for a few bales more—the miser's cry for more gold, at the sacrifice of all that is noble and generous in humanity. Stop, reader—halt—countermarch—drive the plowshare deeper—pile the compost heap higher—cover up the red, bleeding bosom of the earth—hide her nakedness before she is ashamed of herself and the heedless sons she has nurtured.

For the Farmer and Planter.

THE HORSE.

Have I made myself understood? Judicious breeding is not breeding for looks, but for form, substance, endurance and good quality; and the only way to obtain these, is by the selection of mares and stallions which will transmit their peculiarities to their offspring. Blood, although a good thing, is not everything. A horse may have indomitable game—he may be able to travel a great distance in a short time, but, as the jockey said, he may soon “rack his capital out.” One horse may be so formed as to move a great weight by merely throwing his own weight into the collar, while another, owing to a defect in form, would be forced to an excessive wear and tear of muscular power, to overcome the same resistance. A farm horse, or a draft horse, should be so constructed as to do the greatest amount of work with the least possible wear of muscular power. He should use his own weight, and he cannot do it unless he is able to do it, from his conformation. His levers, and pulleys, and muscle, and joints, must be so fitted, and play into each other like a perfect piece of machinery; and, what will make him a fine mover under the saddle, or on the race-course, will not enable him to move a weight behind him, except at a waste of nerve and muscle that will soon wear him out. We have bred to the blood horse so long, in South Carolina, that our horses are generally game enough, but wanting in stamin, and in the right sort of action. They are too light in the body, too sloping and thin through the shoulder, too narrow-rumped, and weak across the loin. How are these defects to be remedied? Not by breeding to every little camel-backed, bull-necked “Kanuck,” or French Canadian, that may come into the country; or to every horse called a Morgan, or a Trotter, but to such horses as are notorious for getting good colts, and from such mares as breed well. Never breed to a horse of bad temper, or one whose colts do not work kindly, for these tricks may be transmitted to others from generation to generation, through a very fine colt.

Why is it that the Morgan horse has obtained such a wonderful popularity? It is owing to the fact that they have been bred carefully for a purpose,

and that they have a wonderful proclivity to stamp their peculiarities upon their offspring. The Morgan is the horse of New England; he is prized, and has been for a long time, above all others; he commands always a ready sale, at a high figure. Everybody breeds to the horse that is remarkable for getting the best colts, and he breeds the best mares, because he is anxious to secure a “trump;” and that is the reason the Morgan is a Morgan, and nothing else.

But we must not suppose that because a horse is a Morgan he must be a good horse to breed from.—He should be a good foal-getter—he should stamp his stock upon his colts. Such a horse will always command a higher price in New England than we are willing to give for him, and, for that reason, we will not be apt to succeed in breeding good horses under our present system. It is miserable policy to be going on in these guess-work experiments; and as long as our people will insist upon recognizing blood as the only requisite or cheapness, we will have a wishy-washy set of horses, and the breeders in Tennessee, Kentucky, and the North, will get all the long prices for fine animals.

A few days since, in looking over a Tennessee paper, we were surprised to see as many as six Morgan and Trotting stallions standing in the same neighborhood, almost, at \$25. In Michigan, breeders do not hesitate to introduce stallions at such a figure as \$2,000 and \$3,000; and it is worth noting, that such operations pay well, because breeders are acting upon a certainty—they know they will get an animal that will pay for the trouble of raising him. It costs no more to raise a good horse than a bad one; and it certainly is bad economy to save a few dollars at the start, to lose a hundred at the end. I am exceedingly anxious to draw the earnest attention of our farmers to the importance of devoting more attention to breeding horses. The time is rapidly coming, when we will find it necessary to introduce a mixed husbandry, or emigrate. Mules and negroes will follow the cotton-bales, and the march of the cotton-bales must, like that of “Empire, Westward” have its way. The introduction of railroads will do away with the necessity of much of the mule-power on the plantation, and horses will be needed for light draft, more and more, as social intercourse increases.

Many farmers are ready to argue that a horse is better than a mule in all farm work, save wagoning, where they are worked and cared for by a careful white man. I believe it is true. I do not believe that the horse is much more subject to disease than the mule, if properly treated; nor in the popular doctrine, that he is shorter lived. Under good treatment, he will perform almost double the work, and

do it kindly. Much of the prejudice against the horse originates from a comparison with the inferior animal. We have bred the best mares to the best jacks, and the worst mares to the worst horses, as a general rule.

A FARMER.

PLANTING POTATOES IN THE SAME HILL WITH CORN.

Emery P. Barnes, of Pharsalia, writes as follows to the *Genesee Farmer*:

Having never seen an account in any agricultural paper, as I recollect, of any one having raised potatoes with corn in the hill, I thought I would try the experiment last Spring. I had finished the potatoes that I was intending to plant, but having some small ones left, I concluded to plant them in the same hills with a patch of corn, and mark the effect. I planted the corn about the 25th of May, the season being so wet I could not plant them sooner.—I dropped the corn and potatoes together, hoed them the same time, and dug the potatoes soon after cutting up the corn. The ground was not first-rate, but the corn was an average crop, full as good as some near by, where corn was planted alone. The potatoes were first-rate—never saw finer. I shall try this again next Spring, and if they succeed as well as they did this year, I shall continue to plant them together. If the two crops do as well together as separate, it makes a great saving of labor to plant them together. Has any one tried planting the two crops together? If so, give the result through the *Farmer*.

MR. EDITOR:—I do not profess to be an accomplished potato-grower—but rather belong to the category of those who always make either a great many small potatoes, or a few very big ones. The above notion of planting corn and potatoes together, I came across the other day, and, as I know an old gentleman, famous for his fine late potatoes, who generally adopted the above process, it struck me as worth drawing attention to it.

He generally selected some plot of bottom land, where the soil was too moist for early corn-planting, and dropped his potato-cuttings in the hill with the corn, and cultivated them together. The greatest objection to the plan is, that it is so easy to pull up a corn-stalk and do the grabbing, that the negroes would be very apt to make fine work of it.

This may in a great measure be obviated, however, by telling them that they may have just as many as they want—for forbidden fruit seems to be more luscious and tempting than all other varieties to Cuffee.

The Irish potato really deserves a more general cultivation amongst us. We are content, generally, with a patch, a little pet plot of soil, wonderfully well prepared and manured, which generally pays well, it is true; but is it good policy to be sending thousands of dollars to New England annually for

even our seed potatoes, when we can grow, near our mountain ranges, as good a potato, and at a lower price?

The potato is very little affected by blight in our country, and no sensible reason can be assigned why millions of bushels should not be grown annually in the upper districts of South Carolina, and the mountain ranges of South Carolina and North Carolina, for export. The New England States produce about twenty million bushels Irish potatoes, worth so many million dollars to them. Much of this product comes South for a market. South Carolina, North Carolina, Virginia and Georgia produce about two and a half million—not much more than a potato apiece for their white population—and yet these four States are bounded by a mountain range as fertile and as well adapted to the production of the potato as any part of the United States.

Now that railroads are beginning to pierce the mountain region, I hope the day may not be far distant when you can chronicle South Carolina as an exporter of potatoes, instead of as an importer.

TUBER.

For the Farmer and Planter.

CUTTING TIMBER.

"We believe it may be laid down as a maxim, that timber is most durable if cut when it contains the least sap."

I quote the above, Mr. Editor, from an article published in your March issue, upon the "best time for cutting timber," and beg leave to enter my protest against any such "maxim." I believe no such thing, because my experience has taught me exactly the reverse. A rail or board got out when the bark slips freely will last longer than any other.—I know boards and garden palings which were got out in the Spring, when the sap was flowing, fifteen years ago, that are sound and good now, while boards on the same farm got since, at a different period, are rotten.

Have you never noticed how long the trees will remain sound that you girdled in your new grounds in the Spring. What it is, or why it is, I do not pretend to explain, but that there is something in the season about the cutting of timber, to make it durable, no one of common observation can doubt. It is really surprising how little is known upon this subject among planters or mechanics. I have conversed with a great many on the subject; nearly all are ready to admit that there is "something in it," but they never had paid any particular attention toward a solution of the mystery. A few days ago, I had a long talk with a very intelligent and prac-

tical gentleman, who had been engaged for thirty years in railroad building. He said that in looking over his memorandum connected with different roads, he found a great difference as to the durability of the timber. He was now satisfied much depended upon the season of getting it, and regretted that he had not known this long ago. I do not think that there is anything of more importance to the planting interest than the solution of this question. Timber for every useful purpose is growing daily scarcer. What can we use as a substitute? It is all important to make it last as long as it can; and if a wagon-spoke or axle, a gin-wheel or cog, a cotton-screw or fence-rail, is more durable, more elastic, or stronger, from being cut at a proper season, it is certainly good economy to look to it. I have this thing very much at heart, and would earnestly call for the experience of the readers of your journal upon the vexed question. I don't want theories, or learned talks about vegetable physiology, but facts, to work upon.

A BACKWOODSMAN.

For the Farmer and Planter.

CORN YIELD.

MR. EDITOR:—For the benefit of doubters and unbelievers, you will do me the kindness to publish the following statement of the "largest yield of corn upon record."

The many absurd stories that have been circulated about the crop grown by Dr. PARKER, in Columbia, have had the effect of creating distrust in the minds of even sensible people in all Agricultural Reports, Awards of Committees, &c.

I have heard sensible men argue, that it was a perfect impossibility to grow two hundred bushels of corn upon an acre of ground—that you could not pack the stalks upon it close enough to produce that amount. We have seen statements of considerably over two hundred bushels grown upon one acre in the West, and, although such things are marvelous to a man who thinks fifty an immense yield—there is no good sense in refusing them our credence.

CORN-STALK.

LARGEST YIELD OF CORN ON RECORD.

A correspondent, writing from Vanderburgh Co., Indiana, informs us that at the State Agricultural Exhibition, a silver pitcher was awarded for the best *five* acres of corn. The award was made upon the decision of three disinterested men in each town, who examined the corn growing in the fields, and measured one acre of each plot. They then made oath to the yield of the single acre, and of the whole five estimated from the acre actually measured.—The award made, under oath, was for 857½ bushels

of shelled corn on five acres, or 171½ bushels to the acre.

If this has been excelled at any other time, or in any other place, we shall be glad to hear of it. Till we do, we shall put Vanderburgh county, Indiana, at the head of the corn column—unless we hear of some mistake in the above report.—*Ohio Farmer.*

AGRICULTURAL RESOURCES OF LEXINGTON DISTRICT, S. C.

It is with great pleasure that we extract from the *Flag* the following able Report, from the pen of our valued friend, Col. H. I. CAUGHMAN. It would be well if the District Societies would all appoint committees to report on similar subjects. The suggestions embodied in the Report, are not only practicable, but are of vast importance to the people of the sandy regions of South Carolina.—[Ed.]

"Lexington, in its position as one of the great central districts of the State, may well be considered of importance, as regards its products. Not that she may be regarded as a planting district, but more as a region fitted to the various products with which industry, thrift and labor universally grace their votaries. Bounded on the east by the Broad and Congaree rivers, with the fruitful and fertile valley of the Saluda penetrating through her for thirty miles, and in her western and southern borders furnishing the main tributaries to the Edisto—whilst all these rivers are fed by the most captivating streams in the world, there is no region of the State more attractive from natural features.—With a variety of soils, her products are varied and various. The alluvial lands of the Broad, Congaree, and Saluda rivers, are fertile to abundance, and produce the great staples, cotton, corn, wheat, and the small grains, to great perfection. Some of the finest plantations in the State may be found on these rivers. The rich, red lands of the Dutch Fork have long been famed for their durability, and have been occupied by an intelligent and thrifty population. Near Ruff's Mountain, situated near the Lexington line, rises the head springs of Crim's and Wateree creeks, emptying into Broad river, and Camping and Bear creeks, emptying into Saluda—all these streams afford fine lands upon their borders, and are tilled with skillful husbandry in the great staples of the State. The entire Dutch Fork is productive, and is gradually improving, both as to the value of lands and the operations of tillage. That portion of the Fork nearest to Columbia, has improved very rapidly, and from the proximity to a good market, planting and farming is here very remunerating. Following the Congaree, we find immense plantations where the broad, level acres annually whiten under the fleecy robes of wealth-bearing cotton, or groan under heavy yields of corn and other grains. The only drawback upon these magnificent lands, is the frequency of freshets, which so often bring ruin and destruction to the hopes of the planter. There is nowhere in the middle country of South Carolina, better and more productive cotton lands than the granite regions west of Saluda,

embracing the valleys of Hollow Creek, and smaller tributaries of Saluda, and, with some exceptions, extending to the Lightwood Creek, on the Edisto. All granite regions will produce good cotton, and the intermediate country between Hollow and Lightwood creeks—for instance, the ridge embracing Leesville—shows that much greater average crops to the hand can be made on light, sandy soils, by manuring and good tillage, with a certainty of gathering all that is made, than is made on the richer alluvial lands subject to disasters and contingencies. Other portions of the district, by manuring and good culture, produce fine cotton; and the entire Sand-Hill portion of our district is not devoid of interest in this particular. But it is not to this great staple that our farmers look for support and independence. Corn, wheat, oats, peas, potatoes, and other marketable crops, flourish everywhere, and are all converted into substantial comfort by the convenience of our district to the market of Columbia.

The proper cultivation of the field-pea, and the use of it as a green manure would, if persevered in, bring about an extraordinary fertility to all the light soils of the district. It is to the South what clover is to Kentucky and Tennessee, and would rapidly improve worn-out and barren lands, and restore them to a fertility unknown to them in their best days. The addition of vegetable matter to soil would furnish food for the succeeding crops, and there is no mode by which this can be so easily done as by turning in a pea crop. Let our planters, then, desist from pulling up and curing or grazing off the pea-vines on the land they wish to improve, but let each give a trial to at least a small portion of land, and by following out our suggestions, see if the good work cannot be commenced.

There are several crops which flourish well, which might be made profitable to farmers. The pindar flourishes best in light, sandy soil, and produces so well, that a few acres yield a large number of bushels, which always command high and remunerating prices. All our Sand-Hill bottoms, if cleared, and properly ditched, would produce large quantities of rice, which furnishes good and wholesome food both for man and beast, and would add vastly to the products of the district. If, then, our swamps were cleared and drained, a great deal of the most valuable lands in the district would be made available.

But the greatest good we could imagine would result from stringent measures being adopted for the preservation of sheep from the ravages of dogs. Lexington is adapted by nature to be a great sheep-walk; she could feed sheep enough in her natural ranges, to clothe the people of the State in wool, and to furnish all the mutton which our cities and towns would require. Sheep have "golden feet;" they enrich the land on which they are pastured; they eradicate weeds from farms, and live and browse upon those plants on which neat cattle would starve. One million of sheep could be reared in Lexington district, and would furnish her people a richer revenue than the richest sugar or cotton region of the same area. They would repay in wool, in flesh, and manure. They are the best adapted to light soils of any other domestic stock, and rich crops may grow on the land manured by them. We may

be asked, how could these sheep be fed? We reply, that a careful system of folding or penning would enable us to produce manure enough to grow peas and grain sufficient to feed them in the Winter, while the Summer range is all that we could desire to sustain a healthy stock of sheep. The introduction of flocks of sheep on an extensive scale would be self-sustaining. The dogs have made such inroads into the once fine flocks which flourished without care in our district, that a sheep is now a rare animal in some neighborhoods. The suggestion we have made is one of vast importance to the people.

Fine meadows might be made on the river bottoms and Sand-Hill streams, if they were properly prepared by the introduction of nutritious grasses. Hay is the best forage we can use; and, when we tell our farmers that Major T. Stark, near Columbia, makes more money to the hand, by making hay, than any cotton-planter in the State, we know that this is an important recommendation. As we do not deem the timber interest a legitimate topic, we refrain from commenting on its great importance to our people.

Lexington is not behind her sister districts in the march of improvement. She is steadily improving, and we hazard little in asserting that, for the past ten years, her advance has far exceeded that of any district in the State not penetrated by a railroad.

It is the opinion of some of your committee, that in order to develop the resources of the district properly, more attention should be given to education. First, they suggest that application be made to the Legislature of South Carolina for the division of our district into six or more parishes, and for an increase of our *free school money* from \$1,200 to \$1,800 annually, and that \$300 be annually appropriated to each parish for the employment of one or more competent teachers in each parish.—Now, if this was effected, we should be enabled to employ competent teachers in all parts of our district, and thereby raise the standard of our common schools, and that, instead of exhausting all the resources of our district in sending our sons and daughters elsewhere to be educated. And thus, instead of exhausting our lands and sending the proceeds to some other districts or States, we should keep the proceeds among our own citizens. To make successful planters, we must make our citizens intelligent; without knowledge they can never turn to account the true resources of our country. Then, let us educate our children under our own eye, and then we will keep, not only the money in our own district, but we will also save our sons and daughters from many evil and pernicious habits; and teach them the principles of industry and economy, which, we are sorry to say, are too much neglected in the present day.

QUANTITY OF BLOOD IN A HORSE.—If we assume the weight of a horse to be twelve hundred, says the *Veterinary Journal*, the whole quantity of blood will amount to eighty-four quarts—one hundred and sixty-eight lbs.—of which about forty-five quarts, or ninety lbs., flow from the jugular vein previous to death; although the loss of a much smaller quantity will sometimes deprive the animal of life.

From the Waltham Sentinel.

ENTOMOLOGY.

The *Waltham Sentinel* furnishes us with the following sensible remarks by Rev. P. Hill, at an agricultural meeting, on the Destructive Insects.—Mr. Hill introduced the subject by saying, that

Insects are not only foes, but friends to the human race. Not to mention bees, silk-worms, and the cochineal insects, there are many families of insects, like spiders, dragon-flies, &c., which live upon other insects. The ignorant farmer often kills his best friends, thinking them foes. Looking for the cut-worm, he perhaps finds a black beetle who has just eaten the cut-worm, and he ignorantly kills the beetle. Turning up the garden-patch, he throws out the larva of a tiger-beetle, and fancying it to be a grub, treads on it. Mr. H. had even seen accounts of people taking pains to kill toads, bats and moles, animals which devour innumerable insects. He had once seen a well-grown toad, four or five years old, eat twenty-three black squash-bugs and ninety-four hiptailed caterpillars, each an inch long, at a single meal. It is true that this meal lasted the toad two days, but the toad is worth a great deal if it eats a quarter of that amount each day. For his part, he brought home young toads and put them in his garden.

In nature there was, undoubtedly, a perfect balance, and the fecundity of each animal was exactly proportioned to the risks which that animal ran of not reaching maturity; were it not so, the species would either increase beyond bounds, or else disappear. The long continuance of species on the earth, shows how marvellous the arithmetical adaptation of the fecundity of each species to its chances of surviving the various destroyers appointed to keep it in check. But man, being free, comes in to destroy the balance, and is gifted with reason and judgment, that he may restore the balance which he has destroyed. The leguminous plants of this country were infested, for example, before the settlement of European colonies, by the larva of the yellow butterfly, and their seeds by the pea-weevil. When the white men came and multiplied fields of clover and of peas, they multiplied the yellow butterfly and the pea-weevil. This, in turn, tends to multiply the birds or insects that feed on these creatures. But it may, nevertheless, be necessary for men to interfere for the protection of their own crops.

How shall men interfere? The first step, Mr. Hill thought, was to gain a knowledge of the insects; there was nothing to be gained by haphazard warfare. In the tobacco-fields of the South, negro children, armed with a shingle, go out in the dusk of the evening and knock down the heavy moths that fly about the flowers. This is acting with scientific skill. The moth has passed all the dangers of infancy, is mature, and will in a few days scatter hundreds of worms through the tobacco-fields. It is easier to kill her than to hunt up and kill the worms—although Mr. H. thought, in that particular case, the best way is not to raise tobacco at all. The canker-worm sometimes ruins many fine trees, and it is difficult to wage war with it. Without an accurate knowledge of its habits, it

would be impossible to guard against its ravages. But when it was known that the female is wingless, and crawls up the tree on fine days after frost, then it was easy, although somewhat expensive, to defend a tree perfectly by a guard of tar, renewed at every thaw. Mr. H. would suggest the probability that one design of Divine Providence, in sending injurious insects, might be to lead us to study more attentively the plan of creation. We must not expect that all our scientific knowledge shall be directly applicable to practice—part of it may be loved for its own sake. To one who reverently studies the insect world, there is abundant reward for his labor in the interesting nature of the numerous facts which he learns.

LIGHT IN STABLES.

Stables should be so constructed, by the insertion of windows in various parts of the building, that they should be "*light as day*." A "*dark*" stable is only a suitable *black hole*—prison-house for such a vicious specimen of the equine race as the notorious "*Cruiser*;" it is also the very worst location for any kind of animal. Sir A. Nylie (who was long at the head of the medical staff in the Russian army) states that cases of disease on the dark side of an extensive barrack at St. Petersburg, have been uniformly, for many years, in the proportion of three to one, to those on the side exposed to a strong and uniform light. Humboldt has also remarked, that among bipeds, the residents of South America, who wear very little clothing—thus allowing the cutaneous, as well as the orbital surfaces, to receive a free ray of light—enjoyed immunity from various diseases which prevailed extensively among the inhabitants of dark rooms and underground locations, and so excellent an authority as Linnæus contends that the constant exposure to solar light, is one of the causes which render a Summer journey through high northern latitudes so peculiarly healthful and invigorating. Dr. Edwards has also remarked that persons who live in caves or cellars, or in very dark or narrow streets, are apt to produce deformed children; and that men who work in mines are liable to disease and deformity.

Light, therefore, is a condition of vital activity, and in view only of preserving the sight of a horse, it is absolutely necessary that while he be the habitant of the stable, his optics shall have free access to the sun's rays.

If a horse was in the same condition as a polyp, with no organ of vision, who shuns light, a dark stable might prove to be his earthly paradise, but as the horse has *special* organs of vision, evidently susceptible to the influence of light, and the integrity of his organism, or a part of the same depending entirely on the admission of light, it is absolutely necessary that stables should be constructed accordingly.—*American Veterinary Journal*.

A small farm well tilled and manured, will give more profit than a large one with the same labor and amount of fertilizing material.

Some say the quickest way of destroying weeds is to marry a widow. It is, no doubt, a most agreeable species of husbandry.

For the Farmer and Planter.

AGRICULTURE, METEOROLOGY, &c.

Columbia, S. C., Feb. 15, 1859.

MY DEAR SIR:—You ask my opinion about Agricultural Colleges, now contemplated by Congress. I reply that, if carried out on the best plan, and enlightened to the present advanced state of science, they will be calculated to do infinite good; and I am surprised that, with the practical utilitarian mind of our countrymen, the greatest pursuit of our race, the largest and most important occupation of the Union, should be put relatively behind all others, and each should be advanced, and often at its expense, while this is left to battle with every difficulty alone. To be sure, of late, through the Patent Office and the Smithsonian Institution, it is at last being heard, and its great value promises to be felt. So I need not proceed further in answer to this portion of your letter; and the more so, as it is a little out of the direct line of my researches, "*ne sutor ultra crepidam*."

But there is another inquiry in yours coming more precisely within the range of my observations and experiments during *very many years*, and to these I reply without hesitation, and as briefly as the nature of the subject will permit, merely skimming over it.

You ask my views on the connection of meteorology with agriculture.

So far as mere practical agriculture is concerned, one might say that every farmer and planter is observant of the weather and the difference of seasons, and that he has regard to these in his daily observations. I know that this is not answering your inquiry; that you expect more precision, and wish to know something of its more scientific connections.

If I am not greatly mistaken, I believe few go beyond noting the *temperature in the shade* and the fall of rain. In the far South it is customary to note when the first and last frost occurs; but not much beyond these. This, you will say, is doing very little with a subject intimately connected with their vital interests, and altogether divorcing science from it.

Let me premise, then, and set out with the proposition that, for vegetable life, growth, and maturity, for production and increase, there is as much to be learned, and more, a great deal more, *above* the soil, than *beneath* it; for nearly all that supports and controls vegetation—nay, most of its nutriment, is *above* it. If this is true, as I trust to make it appear, even in the narrow limits to which I have confined myself, why should our planters, farmers, and horticulturists, be so ignorant of agricultural meteorology? Are we never to ascend beyond mere empirical experiments because our fathers did not? Are we to have no aid from science in the latter half of the 19th century, when every other art and culture and branch of civilization is advancing with giant strides in the career of improvement towards perfection? All other branches of knowledge sink, as it were, into insignificance when compared with this, and it becomes the duty, as no doubt it will be the destiny, devolving upon our countrymen to contribute to the *perfection* of this first and greatest pursuit of man.

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But let me proceed to prove my proposition, that there is more *above* the soil than is *beneath* it that is essential to the production of all crops, fruit, and vegetables.

First, and above all, there is required temperature, but *not temperature in the shade*. You never plant crops or expose fruit in the shade! It is to the full influence of *solar and terrestrial radiation*; to the *coolness of the night air* and to the full force of the *direct rays of the sun*; that without this plants will *not flower nor seed come to maturity*.—The solar spectrum is now well known to be composed of three different kinds of rays, viz: the *eolorific*, the *calorific*, and the *actinic*; each essential, but for different purposes and in different degrees in the great laboratory of Nature. One decks with resplendent and variegated color the beautiful foliage of the forest and garden, and even mantles the cheek of beauty with the fine glow of bountiful life; while another preserves animation even during an arctic winter, causes the wind to arise, waters to flow, and gives to tropical regions their gorgeous and boundless fertility; while the actinic or chemical principle not only bids the seed awake and quicken in the plant, but acts on inanimate as well as animate bodies.

The proportion of these rays differ in different climates and seasons, and this is probably the main cause of the difference in the climates themselves. Thus, all climates are not the same to the daguerreotypists; nor is this dependent upon a mere quantum of light, for in the brilliant regions of the tropical zone their art almost fails them, at least during the brightest periods of sunshine. They probably require the predominance of the actinic principle; and it has been found that many native plants of the tropics have to be protected, when transplanted to the climate of England, from the full influence of solar radiation. It is well known to horticulturists, that different rays are required for special vegetation, and they use differently colored glasses to transmit some rays and exclude others; that the direct solar ray is warmer north than south; that the difference between sun and shade temperature is greater at the north than at the south. In some southern latitudes, (at Cumana, for instance,) the difference between the sun and shade temperature is often but 2°, while far north it is often 160° and more. The necessity of this in the great economy of Nature is obvious; for were it not the case, the maturing of the cereals and the ripening and the effective growth of vegetables would be impossible in the short Springs and Summers of a very large proportion of northern regions, and hence they would be doomed to perpetual sterility and unfit for the residence of man or beast. But we know that vegetation springs into existence there with a rapidity utterly unknown to the south; and so of efflorescence and maturation; and the principle at the foundation of all this is clearly shown by experiments in meteorology.

Thus, we know that a flower will bloom when the sum of the squares of the daily mean of temperatures reaches a certain point from the last freeze of Winter, and that it has been ascertained, for instance, that the common lilae blooms when this sum reaches 7,607° of Fahrenheit, and if the registers of

meteorological and vegetable phenomena are faithfully recorded, as desired in the tables sent out to their correspondents by the Smithsonian Institution and the Patent Office, the amount of temperatures required by all cereals, fruit, &c., in their successive stages, will be well ascertained and demonstrated; and hence, knowing beforehand the average light, heat, and actinism due to every latitude and locality, and the amount of each required by several of the cereals and fruits, &c., in their successive stages, we can easily predicate the adaptability of plants, seed, fruit, &c., to climate, and of the probable product of each—bearing in mind the earlier stages—in any year. I have found, by my experiments, while in the higher regions of the Sierra Madre, in Mexico, that elevation, too, seems to increase this solar radiation, and you no doubt were struck, as well as myself, while there, with the apparent discrepancy of the luxuriance of the crops with the seeming poverty of the soil; nor can I otherwise account for it than through this more exalted radiation; and this is the only explanation I could ever come to of what Baron Humboldt meant by “force of climate,” when speaking of that region.

Hence, then, heat and light, with all their powers, attributes and components, are procured from *without*, in deprivation of which, life could not exist. Oxygen and nitrogen, the main components of the atmosphere, are energetic elements, performing important and indispensable parts in transforming inert matter into plants, and associated with their most instable organic compounds. And carbonic acid, the other and variable constituent element of the atmosphere, furnishes the largest proportion of the food of plants—so much so, that it is calculated, upon the highest authority, that between 4 and 500 tons of fixed carbon is annually derived from the atmosphere to each square mile of forest land! and almost the same by other vegetable productions, and that a very small proportion is derived from the roots.

But this is not all. Knowing the requirements of plants, you should know, daily, the amount of moisture in the atmosphere—the amount of evaporation from the surface—the average amount contained in each wind passing over your locality, and the amount of precipitation (rain), and the temperature of the soil to which the roots of plants are exposed. By these means you will ascertain that the *drought* is *not dryness*, nor is *dryness* *drought*; that they are not correlative terms.

A distinguished Southerner, (the late Mr. Poinsett, of this State, in an interview I had with him not very long before his decease,) to whom I made known these views, very readily undertook to have a series of experiments made, under my instructions, on his rice plantation, to test the nature of these principles; but they were cut short by his untimely death.

A few years ago, a deficiency in an average of two degrees in the thermometer (of Summer temperature) was the cause of the loss of the great grain crop in England, and the markets of the world were thrown into convulsions on account of it. This occurred in the disastrous year 1853, and because the temperatures of July and August (the ripening months there) were 2° below the ave-

age of those months, and were respectively 57° and 59° each. In one of the best wheat districts of the United States, (Rochester, N. Y.,) 64° and 65° are the temperatures of the ripening months, which there are June and July. Some years after, a nearly similar fate was threatened from there being a deficiency of solar influence; the season was too *cloudy* for the crops to mature well. I have, as you know, shown, in another place, how the abnormal conditions of the atmosphere influence the production of epidemics in our race. We see here still more palpably how a wide-spread failure of certain elements in the all-pervading atmosphere produces the same effects in the vegetable kingdom.

I trust that I have now made my proposition demonstrable, even in the narrow limits to which I have confined myself, and that the value of the experience thus derived to every planter, farmer, horticulturist, nay, to every keeper of a hot-house, is incalculable—to every section of our country—to every dealer in their products; for, by these means, the coming crop could be estimated beforehand—thus putting an end to speculation. Hence, then, these experiments should be made everywhere, in every county in each State of our Union; thence to a central bureau at Washington; weekly and regularly published, that their important bearings should be at once known to the entire country.

In Europe, at least three kingdoms have their climate and sanitary condition, I am informed, daily telegraphed to a central bureau.

These experiments have been made by me during many years, but were mainly conducted in the centre of a large city (New Orleans), until within the last two years; and since that time, in the beautiful district of Richland, in the centre of the State of South Carolina, adjoining the city of Columbia, and they have been freely made known to my correspondents, and in public addresses; and hence the foundation of the complaint I have made to you, that “my thunder” has been used by others.

But the complaint is made, that man has no influence over meteorological conditions, and we must take it all as we find it. Now, this is not the fact. We not only know by experiment what and when the conditions we require are to occur, and adapt our “seed-time and harvest” to them, but we actually have and exercise the great power we possess over the moisture—in and above the soil—in the atmosphere, by draining, ditching, and clearing the under and forest growth in the neighborhood. The influence on temperature of denuding a country of its native growth, or covering it with trees, is well known; and that statement that is made, is quite credible—that the *average temperature* of whole districts in England has been elevated *one degree* by the system of drainage adopted there.

We can influence the precipitation by extending these operations over a wider area; and terrestrial as well as solar radiation is much influenced by changing the color of the soil. Bad cultivation and inordinate rains remove the salts necessary to prolific vegetation. Long droughts draw up, by capillary attraction, the salts of the subsoil; you supply the balance by artificial addition, such as chemical analysis shows is called for by the special cultivation desirable; and if he wishes to be a suc-

cessful agriculturist, and somewhat exempt from the proverbial uncertainties of climate, he must not only be familiar with the circumstances and conditions in which he is placed, but carefully study and understand the principles set forth; and he will thus learn the unerring rules of the adaptability of all the forms of vegetable life and production to the various contingencies of climate and localities, and be remunerated for his toil.

The true philosophical basis for all success in agricultural pursuits, is derived from such a precise knowledge of climatology as can alone be procured through the thermometer, rain-gage, &c., (together with an acquaintance with vegetable physiology)—all else is empirical. Experience may anticipate theoretical knowledge—it can never be a substitute for it; it usually does in agriculture, but the *only perfectly safe foundation* for a true understanding of it is where *theoretical truth* has been confirmed by the *lessons of experience*. What may suit one season may completely fail in another, and cannot be relied on with any certainty as a foundation of business operations, or for a permanent source of livelihood. The application of this to different climates, is the interpreter of their capacities, and shows us at once why different countries are made prone to favor one kind of produce, while others are adapted to different kinds; why in some it fails, or is only an occasional product, while in others it is more uniform, and can always be calculated on. It shows, in fine, that *all are dependent upon precise and invariable laws*, of which these are the true exponents.

With an apology for the unexpected length of this epistle, I remain, very respectfully, your obedient servant.

E. H. BARTON.

Hon. CHARLES NAYLOR, Washington.

From the American Agriculturist.—Prize Article.

SELECTION OF COWS.

We are not going into a discussion of the different breeds of the cow, as understood by cattle-breeders, but of the general characteristics of those best suited to dairy purposes. We care not what her breed, whether it be Short Horn, Ayrshire, Devon, Hereford, Alderney, or Native, further than that she is a *good milker*. As to the *quality* of her milk, it should always be rich; as to the *quantity*, that may depend upon the size of the cow, and the amount of food she consumes. We have known cows that yielded thirty quarts of milk in the height of the season, which were not so economical to the dairyman as others not giving over twenty quarts. One ate enormously, the other moderately. It depends much, also, on the quality of the pasturage, as to what description of cow the dairyman should adopt. A compact, even-bodied cow, will frequently live and thrive, and do her best in milk, where a large, rangy beast would barely live, and yield less milk than the other; while, in abundant pastures, where the food is easily obtained, the largest animal, giving a proportionate quantity, would be preferable. So, in the selection of his cows, the dairyman should understand the *quality* of his pastures, equally with the description of cows with which he is to stock them.

DESCRIPTION OF A DAIRY COW.

As a rule, we would say, that a compact, small-boned cow of her kind, whatever the breed may be, is the most economical for the dairy. A raw-boned, big-jointed, loose-made beast, is usually a huge feeder, and a poor keeper, and, although sometimes an extraordinary milker, is not, on the whole, a profitable one to keep. Our own style of dairy-cow should have a small head, with a lively eye, and a light horn. Her neck should be thin, her shoulders open, or well spread apart; her ribs round, and extend well back towards her hips; her back straight; her loins and hips broad; her rump level; her flanks deep; her belly capacious, without being *paunchy*; her twist full, and low; her udder clean, silky in the hair, with fair-sized taper teats, standing well apart as they issue from the bag. When milked dry, the udder should be small and shrunken—not meaty—but when full, it should be plump, and hard; her tail fine; her legs and feet small; and, with all these, she should possess a quiet disposition. It may also be added, that she have a yellow skin *beneath* the hair, be the hair what color it may, and the hair be fine, silky, and, if possible, waving, or slightly curling. These qualities, of course, will make a *handsome* cow—an objection in the eye of no one, and certainly none to the disadvantage of the cow possessing good milking properties. A beast the contrary of this description, although possibly a good milker, is not desirable; and when the kind we have described is just as easy to be obtained as its opposite, if one will but take a little pains, the standard of perfection, or as near to it as possible, may as well be adhered to as otherwise. We say a yellow *skin*, as distinguished from a white or pale one. A yellow skin usually indicates a *rich* milker, while a pale skin indicates that of inferior quality. All observing dairymen will acknowledge this fact. Exceptions occur, but the rule obtains.

Having selected the best herd of cows we could find, instead of getting a wretched, inferior bull, with just vitality enough in him to beget a calf, as the means of enabling the cow to produce her yearly supply of milk, and then destroying the calf soon after birth, we would select a bull of some distinct milk-producing breed—and that breed should be of a kind fitted for our own soil and climate. This bull should be descended from a good milking dam, and also from a sire whose ancestors were of a good milking tribe, if possible. A close examination into these facts would give the bull a pedigree, of course, which we would demand. In addition to his milk-begetting qualities, he should add those of good shape, fineness, and general quality peculiar to his breed. We would preserve the heifer calves by this bull from the best cows, and rear them, to keep the number of our cows good, as the calves grow up and the cows are worn out or displaced.—According to the general physiological rules of “like begetting like,” our young cows would nearly all turn out the first class of milkers. We would educate the calves to the development of their best milking faculties, thus: They should be *well fed*—not pampered; allowed plenty of new milk for the first month, then gradually led off into skimmed milk, or whey, with a little oat, corn, or oil

meal, and be kept all the while in a sweet grass pasture. At four months they would be fit to wean. From that time forward, pasture in good grass until Winter. Through the Winter, soft, sweet hay, and, perhaps, a quart of oats, or half the quantity of Indian meal a day, until grass in the Spring.—Then good grass pasture another Summer, and hay through the Winter. At two years old, grass again for the Summer, and turned to the bull in July—even her own sire, if he has proved a good getter, for such close breeding is not hurtful for a *second* generation. The young cow then comes in a finely developed beast, and being gentle and docile, as she would be if properly treated, she furnishes a fine milking cow—perhaps at a little extra cost, but one which, in the natural order of things, is worth one-and-a-half, or two, that can be obtained out of a common drove for dairy use. Three or four good heifer calves thus raised every year, by an intelligent dairyman, will well keep up his herd of twenty cows, and in that proportion for a smaller or larger number.

As a proof of the advantage of thus breeding up a herd of dairy cows, the writer would relate his own experience: Many years ago, we kept a milk dairy for supplying the town people near by with milk. Our herd was a mixed one of different breeds—Short Horns, Devon, and Natives, with intermediate crosses and grades. We selected two compact, well-made bulls—one Short Horn, and one Devon, pure in blood, each of his kind. To the pure bred cows of each breed we bred the same blooded bull, and crossed them upon the grade and native cows, as we judged best to effect our object of producing good milkers. Our thorough-bred calves of each breed, we, of course, raised, and selected the most promising of the grade heifer-calves to raise for future dairy-cows. In the course of our operations we bred and reared about sixty heifers, and with *one* exception, only, when they came into cow's estate, every individual turned out a superior milker, with fine form, and excellent quality of carcass as well. But we will give the sequel.—After some years' continuance—not because the business was unprofitable, but because we could not give the personal attention to it that it required—we discontinued the occupation, and sold off the most of our herd, chiefly grades—a part of them at public sale. Coming in, as they did, at different seasons of the year, to give a *regular* supply of milk, as far as possible, our cows were in different conditions as to flesh. The full milkers were in moderate flesh; the dry, and nearly dry ones were in excellent condition. As they were put up to be sold, since every buyer wanted “a first-rate milker,” the question as to her milking quality was asked of each one when offered. There was a difference, of course—some better, some not equally good. Yet, no matter what the answer might be, the *fattest* cows, in every instance, *brought the most money!* So much for the eye over utility!

But many dairymen say they “can't afford to raise their cows. It is cheaper to buy them, and run the chances.” We do not believe it, at least, as the *chances* run within our own experience and observation. It may be objected, and with considerable truth, we admit, as in late examples, that

the Short Horns and Devons are not milkers. To this we reply, that they are, *naturally*, good milkers; but the modern breeders have bred for flesh and symmetry of shape, chiefly, and in striving for these, have measurably bred out, or sacrificed the milking quality. But the milk can be brought back again by breeding. That quality is still latent in the animal, and use and education will restore it in the manner we have indicated. Still, we are not advocating *breeds* of cattle; we speak only of selecting good dairy cows, and perpetuating their best milking qualities in their descendants.

TANNING AND CURRYING.

Tanning is the art of manufacturing leather from the skins of various animals, and is founded on the fact that the tannic acid contained in the barks, being an astringent, hardens the animal jelly contained in the hides, so that they become close-grained, compact, and insoluble in water. Tannin also precipitates the green vitriol, or copperas, (sulphate of iron,) that accumulates between the hair and skin.

The outer coating of the hemlock, and various species of the oak, are the principal materials generally used in the United States: the former for the great body of sole leather; the latter for the various harness and upper leather.

The trees are felled in the season when the sap is ascending, from May 1st to September 1st, though usually only from May 15th to August; and the bark is easily peeled off in sheets of any required length, but usually four feet long. It should be suffered to lie with the inner surface exposed to the sun one or two clear days, to dry up the sap on that surface, when it should be gathered into piles of a square form, in a dry place, on poles above the ground, and be protected by large pieces, laid carefully on the top of the pile. The body only is peeled in this country, except the larger branches of the oak; while in England the small limbs, and even twigs, all that will peel, are saved, and thought to be stronger than the body bark. Thirty days of dry weather will cure the bark sufficiently for use. But in a large business it is drawn to a road-side after harvest, and piled in like manner, and is suffered to remain until Fall or Winter, when it is drawn into the tannery, and stored in large piles in the open air, or in cheap open sheds, and taken into the tannery as wanted. At the North this is usually done in Winter, which makes good sleighing almost as important to tanners as bright skies in June and July.

Chemical tests give to hemlock bark only $3\frac{3}{4}$ to 6 per cent, tannin; American oak not more than half as much, while English hedge-row is 16 per cent. The chestnut oak, which grows very abundantly in some parts of the South, furnishes an excellent and plentiful bark for tanning purposes. Various other foreign substances contain tannin. Valonia, of Turkey, or the acorn cup and ball, gathered in the green state, is the favorite in England; and it is believed that the great burr oak of the Middle States yields an annual crop of the same material, which, if gathered, would be sufficient for all the tanning of America, and save the destruction of our noble forests, now going on so rapidly. The strongest article

known is kuteh, imported from the East Indies, evidently an extract boiled down to salts, which contain about 55 per cent. pure tan. It is too expensive for common use in this country, but it is much used in England, in liquors for heavy stock. It is computed that for every cord of hemlock bark four trees are peeled, and one cord will tan five hides.—If the whole quantity of leather is 1,000,000 sides, 200,000 trees are destroyed to furnish the bark.

The skins of animals are immersed for several days, or even weeks, in water with bark, mostly of oak or larch; and other astringent substances, as *terra japonica*, are employed, which shortens the time, but renders the substance more hard and brittle. Another method is by *tawing*. They are left to soak for six weeks, in water with fresh slacked lime, changed twice, rinsed, again soaked in water mixed with wheat bran, until they float, but, when beaten down, do not rise again. The bran is then scraped off, and a liquid paste is prepared; for 100 sheep-skins, 8 lbs. of alum and 8 lbs. of salt are dissolved in warm water, and added to 20 lbs. of fine wheat flour and 96 yolks of eggs. A ladleful of this paste is put into a trough of warm water, in which 12 skins remain for some time, and are then pulled and stretched; and this is repeated twice.—They are then left six days, and afterwards quickly dried.

Slow tanning makes leather softer and stronger.

Time and labor are both materially reduced, and the quantity and weight of the leather increased, by the substitution of *water-power* for manual labor, in many of the most laborious parts of the process, viz: to soften and cleanse the hide preparatory to the bark being applied to it; to grind the bark; to move pumps for transferring the decoction of the bark from one vat to another, (much of which is necessary to be done daily in an extensive tannery,) and to roll the leather preparatory to its being sent to market; also the least possible quantity of lime is now used to facilitate getting off the hair. This has been found greatly to add to the weight and quality of the leather. The application of heat to the bark, in *leaches*, is found to be very important, and more particularly the application of the decoction (usually termed *liquor*) to the hide, rather than the bark.

Currying is the art of dressing cow-hides, calf-skins, seal-skins, etc., principally for shoes; and this is done either upon the flesh or the grain. In dressing leather for shoes upon the flesh, the first operation is to soak the leather in water until it is quite wet, then the flesh side is shaved on a beam about seven or eight inches broad, with a knife of peculiar construction, to a proper substance, according to the custom of the country and the uses to which it is destined. This is one of the most curious and laborious steps of the whole process. The knife used is of a rectangular form, with two handles, one at each end, and a double edge. It is thrown into water again, and scoured on a board or stone commonly set apart for that use. Scouring is done by rubbing the grain or hair side with pumice-stone, or with some other stone of a good grit. These stones force out of the leather a white substance, called the *bloom*, produced by the oak-bark in tanning. The hide or skin is then conveyed to the shade or dry-

ing place, where the oily substances are applied termed *stuffing*, or *dubbing*; when it is thoroughly dry, an instrument, with teeth on the under side, called a graining-board is first applied to the flesh side, which is called *graining*—then to the grain side, called *bruising*. The whole of this operation is to soften the leather to which it is applied. Whitening or paring succeeds, which is performed with a fine edge to the knife already described, and used in taking off the grease from the flesh. It is then boarded up or grained again, by applying the graining-board first to the grain and then to the flesh.—It is then fit for waxing, which is now performed by coloring, which is done by rubbing with a brush, dipped in a composition of oil and lamp-black, on the flesh, until it be thoroughly black. It is then sized, called *black-sizing*, with a brush or sponge, dried and tallowed; and when dry, this sort of leather, called *waxed*, or black on the flesh, is curried.—The currying leather on the hair or grained side, called *black on the grain*, is the same as currying on the flesh, until we come to the operation of scouring it. Then the first black is applied to it while wet, which black is a solution of sulphate of iron, or copperas, in plain water, or in the water in which the skins as they come from the tanner have been soaked. This is first put upon the grain after it has been rubbed with a stone; then rubbed over with a brush dipped in stale urine; the skin is then stuffed, and when dry, it is seasoned—that is, rubbed over with a brush dipped in copperas water, on the grain, till it is perfectly black. After this the grain is raised with a fine graining-board; when it is thoroughly dry it is whitened, bruised again, and grained in two or three different ways, and when oiled upon the grain with a mixture of oil and tallow, it is finished.—*Tennessee State Farmer and Mechanic.*

SIR ISAAC NEWTON'S TASTE FOR FARMING.—When Newton had reached his fifteenth year, he was called from the school at Grantham, to take charge of his mother's farm. He was thus frequently sent to Grantham market, says Timbs, to dispose of grain and other agricultural produce, which, however, he generally left to an old farm servant who accompanied him, and Newton made his way to the garret of the house in which he had lived, to amuse himself with a parcel of old books left there; and afterwards he would entrench himself on the wayside between Woolsthorpe and Grantham, devouring some favorite author till his companion's return from market. And when his mother sent him into the fields to watch the sheep and cattle, he would perch himself under a tree, with a book in his hand, or shape models with his knife, or watch the movements of an undershot water-wheel. One of the earliest scientific experiments which Newton made was in 1658, on the day of the great storm, when Cromwell died, and when he himself had just entered his sixteenth year. Newton's mother was now convinced that her son was not destined to be a farmer; and this, with his uncle finding him under a hedge, occupied in the solution of a mathematical problem, led to his being again sent to Grantham, and then to Trinity College, Cambridge, which thence became the real birth-place of Newton's genius.—*Scientific American.*

From the Country Gentleman.

ABSORBENT POWER OF SOILS.

Absorption, defined by Webster as "the act or process of imbibing by substances which drink in and retain liquids," is a quality possessed by all soils in a greater or less degree. And of this difference in capacity, especially as regards absorbing and retaining manures, something has long been known, and has given rise to the application of the terms "hungry" and "quick," to loose and gravelly soils, because they do not long show the effect, and speedily manifest the action of manure, while clays were said to "hold" the fertilizing matters applied. The investigations of chemistry show that beside what would naturally result from the different mechanical action—the compactness or porosity of the soil—there are differences in their chemical affinities for acids, alkalies and gases, which vary their power of absorbing and retaining the elements of fertility derived from manures.

Loamy and aluminous soils were found by Prof. Way to possess the power, when used as a leach or filter, of retaining the ammonia, phosphoric acid, potash, etc., contained in the drainage of a London sewer—the very elements most valuable for manure—and to have the wonderful property, not only to select, but to retain these elements against every power naturally brought to bear upon them, save the growth of plants themselves. "A power," he remarks, "is here found to reside in soils, by virtue of which, not only is rain unable to wash out of them those soluble ingredients forming a necessary condition of vegetation, but even these compounds, when introduced artificially by manures, are laid hold of any loss, either by rain or evaporation."

These conclusions seem to show that, on most soils, (one class of experiments was made with light loam) manure may be applied at any time in the season, with equal good results—that there is no danger of loss when actually mixed with the soil, either by filtration or evaporation. Further experiments are needed to prove the absolute correctness of these conclusions to the general mind, but there are those who believe they may act upon them with safety. If established, much labor may be saved in the application of manures. They may be drawn in the fall and plowed under, or left spread upon the surface, or may be distributed in Winter instead of immediately before planting and sowing, which is ever the most hurrying season of the year. For ourselves, on clays or heavy lands, we would not hesitate to act upon these suggestions.

Some experiments tried in England several years since, by Mr. Thomson, to ascertain the power of the soil to retain, unimpaired in value, manure applied during Winter, and, also, its power to hold in suspension the fixed ammonia of barn-yard tanks and manure-heaps, resulted in the following deductions:

1. That clay soils might be manured a considerable time before sowing without loss.
2. That light, shallow soils should not be manured heavily at one time; and the manure should be kept as near the surface as possible without leaving it uncovered.
3. That it is desirable to deepen the cultivated

soil on all light land, as it thus gives it a greater power of retaining manure.

That all soils possess considerable power of absorbing and retaining manure, is well known; but the great question of the most economical application of different fertilizers is, and will long remain an open one, and one upon which every farmer can do more or less to satisfy himself by practical experiment. Let those who can, throw light upon the subject, for it is one of large importance to agriculture.

From the American Farmer.

THE USE AND ABUSE OF ARTIFICIAL MANURES.

MESSRS. EDITORS:—It is really astonishing, when we estimate the amount paid out by the farmers of Maryland and Virginia, during the last eight years, for what are called *artificial manures*, and not only the amount, but the fact, that they have, during that period, learnt so much as to their value, (when properly used) and the *mode* of applying said manures. Among the first articles written on the subject of *Guano generators and regenerators*, &c., was one elicited from the writer by your predecessor, no later than the Summer or Fall of 1850; and it was the cause of much inquiry (not for its intrinsic value) from the writer, at that time; nevertheless, such has been the knowledge gained in such a *very short period*, not only as to the *mode* of application, but the value of artificial manures, that at this time, such an article would be laughed at, as the author of it did, on casting his eye over an old number of the *Farmer*. But, Messrs. Editors, it would be well if we *now* had more *fears* as to the application of the great quantity of the so-called manures and fertilizers, which are now so carelessly thrown away on our lands; would it not save "thousands" to our planters and farmers? My object is to notice the great *abuse*, not the *use*, of artificial manures; for, *mark it*, Messrs. Editors, the great improvement of our farms began with the introduction of artificial manures, as also, per consequence, the advance in land. While many have used such manures *rightly*, that is, to aid them in increasing their *straw* and *corn provender*, on which *only* they may rely, with *certainly*, for an increase of barn-yard manures to replenish their grass land, and thereby double their *hay* crop, and then, have relied only on lime and the barn-yard, (unless they had still more old fields,) many have come to the most absurd conclusion, that it is cheaper to buy guano, than even haul out manure, much less to do all in their power to make every pound they can, and be glad they have it to haul out. Well, what is the consequence? Why, just what struck the writer seven years ago, when the President of our Maryland Agricultural Society said, in an address to the Society on this very subject, "The old cry, as formerly, about *plaster-lands over-stimulated—guano* won't act as it used to do, and my land getting poorer—what is to be done?" &c. "Emigrate or sell out, to go at something you don't understand—and, my friends, so it is always, the *same old tune*. Now, we want—and, I tell you, must have—an experimental school," &c. If I have, from memory, not quoted one of our late Presidents correctly, I beg his pardon. But, sir, we now constantly hear what he predicted long

ago; and the sooner we set about to "mend our ways," the better. I do not condemn artificial manures, but their great *abuse*. If *used* rightly, there is great value in many of them; and let all try to invent something to take the place of *Peruvian guano*, and we will try to find out the "humbugs" by which we have been *so often* cheated. And now, the most potent of all, is the careless abuse of guano, when not used with an eye only to the *barn-yard and lime*. No land, according to the humble experience of the writer, who has used guano first and last in large quantities, ought to have guano (Peruvian) more than *twice*, and limed, in small doses of twenty-five bushels per acre, and *boned*, if the expensive means are at hand, at fifteen to twenty bushels per acre; then set in grass after wheat, using two parts timothy and one clover, according to circumstance; and in our tobacco region, where light land will not admit of its laying long in grass, I would recommend (as I intend to do this Spring myself, on a tobacco farm—and it is not now too soon to sow clover-seed) mixing *one-third* timothy with clover-seed, and apply nearer a peck to the acre than less. *Thousands* of bushels of clover-seed have been thrown away, by sowing *too thin*, besides by the bad practice of grazing your clover, which, according to my experience, ought not to have a *hoof* on it, from the time it is sown, until it begins to bloom; I have done this, whenever I could get managers to attend to it. The waste in permitting stock to go on clover too early, in Spring, is immense.

I have tried high and low-pressure farming—there is great loss in both; the first will break farmers of *small means, very soon*; and those who have *large means*, soon get tired, and quit before they spend *all*. Like most other matters, the truth is between two extremes. I know many who began farming by buying land at \$5 to \$10—of course poor, but naturally good—and that in this and the lower part of our State—some grew tobacco and grain, as a *money crop*, and some *grain* only, and I have seen such, not having enough to pay one-third in cash, for their land, raise large families, buy negroes and get rich, and, for their lives, they could not tell you how they did it. On the other hand, I have known others, considered very *intelligent, industrious, and sober*, buy fine farms, and pay all down, in cash, make large crops, and in a few years *break*, but not from extravagance or bad management, as far as all could see. Of course, I have no particular individuals in view, and only suggest this old fact as a *text*, for the comments of wiser and more experienced farmers.

ED. REYNOLDS.

CURE FOR BIG-HEAD.—I have lately had letters addressed me requesting a recipe for curing the big-head in horses. The recipe was published (by my request) in the *Prairie Farmer* some years since, and if you think it best you may publish it again. It will or has cured ninety-nine cases out of the hundred: Oil origan. 1 oz.; spirits ammonia 2 oz.; ditto turpentine 2 oz.; olive oil 1 oz.; pulverized eantharides 1 drachm; mixed and well rubbed on the enlargement once a day.

Yours,

STEPHEN MILLIKIN.

From the American Farmer.

HORSES AND STABLES.

As humanity as well as interest calls upon all to keep their horses in good condition, it is the duty of all owners of such property not only to *feed* them well, but to see that they *get* a liberal allowance of hay and grain daily; the latter is all the better for being chopped and mixed with cut hay or straw.—The horse should be fed three times a day—say in the morning, at noon, and before sundown; they should be curried, or carded, and brushed down, morning and evening; watered thrice a day, and receive, two or three times a week, a portion of salt, say two ounces, or the same quantity of the salt, ashes, and oyster-shell lime mixture. When not at work, they should be gently exercised every fair day.

The stable should be cleaned night and morning, and be bedded at night with straw or leaves.

MARES IN FOAL.

These should be provided with a good warm shed or stable, facing the south, and have free access to a dry yard for exercise. Their food should be sufficiently liberal to keep them in good condition—not *fat*—and should consist of both grain and hay; they should be fed at least twice a day with grain in moderate quantities, and hay thrice a day; it should be recollected that, as they are carrying a young one, they should be given a sufficiency of food to preserve them from want, and to encourage the growth of the colt they have within them. As other horses, they should be cleaned daily, bedded at night, be watered thrice a day, and be salted two or three times a week. Bear in mind that a mare with foal should never be kept in a state of obesity, but always in good condition.

COLTS.

Provide these with good warm sheds, facing the south or south-east, opening into a dry yard, with a similar exposure. Take our word for it, that if you wish your colts to become good-sized, well-formed, well-developed horses, you must feed them during Winter with grain and good hay, so as to furnish them with the materials out of which to build up their frame-work. Half starving young animals, is the most unphilosophic, uneconomical, and inhumane policy ever pursued by an agriculturist. It is not necessary to keep colts positively fat, *but you should so feed them, as that they are always kept in a good growing condition*; give them food enough to keep them in high spirits, and if they be a little saucy, so much the better. *All colts should be kept well, but especially during the first Winter*. Stint a colt in food during the first year, and he will never make a first-rate horse; stint him in food during the subsequent years of his coltship, and you run greater danger of so crippling the developments of his frame, as to despoil him of at least one-fifth his fair proportions. *Pure sand* will not produce vegetation; neither will a poorly-fed colt ever make a first-rate horse. Attention must be paid to watering thrice a day, and to salting them; and the use of the brush or a wisp of straw upon their bodies, daily, will be of service; besides rendering them more docile in disposition, they will be otherwise benefited.

From the Prairie Farmer.

HOW SHALL WE FEED OUR LAND?

Charcoal as a Manure.—Preparation.—It should not be ground too fine for application to the soil.—It should not be powdered. Small cubes of coal, the size of marrowfat peas to chestnuts, possess more absorbent power, and, consequently, greater fertilizing properties. We have already stated it absorbs largely in common temperature—that it absorbs the gases which rise, and retains the organized matter found in water, for plant food. Charcoal is easily prepared, after burning. Some grind or crush it on mills prepared for the purpose—like plaster mills—where large quantities are used.—But the ordinary farmer may prepare or pulverize with a wooden mallet—with a long handle, and a shovel and hoe—a large quantity in a day. If well burned, it will cost little labor to prepare a thousand bushels. Remember, it does not increase its availability as a manure to pulverize it too fine.—If the earth, and ashes of the pit, are mixed with the coal, no harm will result. This substance, as we have before remarked, is valuable in the compost-heap, mixed with night-soil, or the manure from the hog-house. It can scarcely be better employed, perhaps, than in retaining the fertilizing qualities of the two last-named manures. And yet much, the vegetable deposits of the swamps and low grounds, the leaves of the forests, may be, with equal profit, used in the compost-heap; thus, not only improving the quality, but increasing the quantity of manure. Charcoal, as a manure, is chiefly applicable in its direct application to the soil where corn, wheat, oats, &c., are to grow. It is no detriment to meadows to receive a top-dressing of pulverized charcoal. On clay land, in wheat and corn, we have seen a decisive improvement of twenty to twenty-five per cent., effected by the use of this manure upon the surface, scattering it broadcast from the wagon or cart. But it should be remembered that charcoal is not simply a transient assistant to the plant—not an annual manure, but perpetual. It acts and re-acts. It is still there a dozen years hence unchanged and unchangeable, performing its brokerage duties systematically and profitably, and retaining no per cent. We need not refer the experienced reader to any data in proof of this fact. We know old coal-beds that will produce the best corn or other grain, notwithstanding the constant cropping for thirty years, of any piece of land in the neighborhood. The particles of carbon are still distinct, and scarcely diminished in size, except so far as the use of the plow, hoe, or harrow, has worn them. Charcoal is more valuable because of its property to retain and yield up organic matter, than as furnishing carbon for the plant: hence the objection to too thorough pulverization. It is proper to add some testimony here as to its value. We copy from various records:

Charcoal on Grass Land.—A farmer in Connecticut seeded a piece of hill land of about three acres in timothy, which was mowed once each year for five years, receiving no manures, and was not pastured. During this time the grain was about one-third in the amount of crop. After five years, a top-dressing of dry dust and the fine coal from

the bed of a pit was given it, which increased the crop of hay one-half, with no visible decrease since—five years.

Charcoal about Fruit Trees.—J. N. Smith, of Chimney Point, Vt., wrote, in 1844, that he had used a few shovelfuls about the roots of his fruit trees, with the following results: "It keeps away the grass, prevents the borer entering the bark, beside being a most excellent manure."

Charcoal on Wheat.—Robert L. Pell, in 1844, says he obtained eighty bushels of wheat per acre by the use of fifty bushels of pulverized charcoal per acre on soil that was sandy loam, with a small admixture of clay, with a clay and sandy subsoil.

An Ohio farmer affirms he had sown wheat on a piece of ground three times; in each case it was a failure. Charcoal dust was applied as a manure (quantity not stated), and the succeeding crop was twenty-five bushels per acre, of fine, plump wheat.

Charcoal on Corn.—We have seen a crop increased double, when corn was planted after corn on old meadow land, by sowing broadcast ten barrels of pulverized charcoal to the acre. This experiment was on heavy loam with a clay subsoil.

Charcoal on Potatoes.—Here the value of this manure not only exhibits itself in an increased quantity, but in an improved quality. No watery, "soggy" potatoes grow where charcoal is used—at least we never saw any.

We might multiply evidence of its effects in increasing the aggregate crop, but it is not necessary. It should be remembered, that its mechanical effect on heavy soils is not the least important of its valuable qualities. Mixed with heavy soils, it renders them more porous, and prepares them to receive the treasures of air and water, and profit by them.

GOOD ADVICE TO A FARMER.

"Many years ago," said a Quaker friend, who told us the following anecdote: "Many years ago, a brother of the celebrated Benjamin West, who had been a cooper in this city—a man of sterling sense and integrity—purchased a farm some miles out of the city, which had been suffered to be over-run with briars and bushes. He was, for a short time, considered by his neighbor farmers as very far from being as wise as Solomon, or even themselves; but, in a few years, his was the best and most productive farm within fifty miles around, and his fame as a farmer spread far and wide. One day a man came to him who was desirous of improving his farm, and asked him how he should do it. 'Go home,' said Mr. West, 'and make five or ten acres as rich as thee wants, and come to me and I will tell thee what to do next.' 'But,' said the farmer, 'I have not manure enough to do that.' 'Very well, then go and prepare three acres, two acres, or one acre, in the same way; but what thee undertakes, do well.' 'The farmer,' said our friend, 'perfectly comprehended the advice, and, what is unusual, practiced upon and benefited by it, leaving, at his death, one of the best farms in the country. Go, and do thou likewise.'"—*Philadelphia Herald.*

The sunshine of life is made up of very little beams that are bright all the time.

The Farmer and Planter.

COLUMBIA, S. C., MAY, 1859.

HINTS FOR THE MONTH.

The month of April has been more favorable for farm operations. On the 2d and 3d we had the greatest fall of rain of the season, in all $2\frac{1}{2}$ inches—cleared off with a strong nor'-wester—succeeded by a big frost, on the 6th and 7th, which has nipped much of the fruit. On the 6th the mercury fell to 32° at sunrise, and the ground was frozen. The high winds and sudden clear-offs from the northwest, since the vernal equinox, are unfavorable types of the seasons to rule over us. If the theory be correct, we have trouble in store. *Nous verrons.*

The Cotton crop has been pretty generally planted by this time, and everybody is growing anxious about a "stand." Run an iron-toothed harrow over the beds, if you are very anxious and find the grass growing too fast—but a little patience will not be amiss. Cotton will come up if it has been properly planted. Where missing spots appear too often in a field, it will be found good policy to make the hoe hands, in chopping over, drop a few seed. The seed, if rolled in some stimulating mixture—brine and phosphate of lime, guano, plaster, &c.,—will come up very soon, and overtake the rest. This may look like a pieayune business, but remember that a good crop cannot be made without a good stand; and resolute, patient efforts can only secure it under such difficulties as the seasons will often throw in our way. We have spotted places in the field as late as the 10th of June, which matured four or five bolls to the stalk—land ordinary.

Too much care cannot be taken in the cultivation of the cotton at the first and second working. It is, when young, a very delicate plant, and the least abrasion of the root or stem will bring on disease and death. After it begins to limb it will stand almost any sort of treatment and live. The old notion of "siding" cotton with a bull-tongue and a board, or a twister, with the bar next to it, "just close enough not to split the stalks," among all observing planters, is getting out of fashion. The scraper is decidedly the best implement for siding cotton—best for the cotton, and best for the hoe which follows it—but it is needless to lay down any *invariable* practice, the planter's *modus operandi* will always be governed by the seasons, condition of his soil, and inevitable embarrassments. But he who haggles over his cotton the first time, and leaves the young grass amongst it, must not complain against the seasons for a bad stand. Sore-shin, dying out from

cold dews and drying winds, and all that sort of trouble, may often be charged to the rough work (now become necessary) of tearing out the strong grass from amongst the young cotton. It will always be found the wiser plan to kill the grass when young; and this is the month to do it in. But, in all your anxiety, don't put a plow or hoe into the ground when it is too wet. It is "jumping out of the frying-pan into the fire."

The Corn crop will require careful management now. Get through all replanting as soon as possible. It will not pay; and, save as a fructifier, in the event of a drought—when the tassel on the old corn dies and new shoots start, after a rain—the "re-plant" would be hardly worth the labor. Every effort should be made to have the plantation in good trim for the wheat-harvest: the planter who enters harvest with his "crop in the grass," will be sure not to get out of grass-seed, or have much leisure on hand. Your culture may be close, thorough and deep now, with an eye to hot and dry weather hereafter.

The Sweet-potato crop should not be overlooked—have your ground prepared well, and avail yourself of every season to set out sprouts.

The sooner Peas are planted the better. Every planter should devote a portion of his fields exclusively to the pea. If you *will* plant among the corn, do it soon, so as to make peas; or late, when laying by, so as to make vines. We do not believe in the doctrine, that a big crop of peas neither detracts from the corn or the soil. If we did, we would never plant them—for anything which does not extract virtue from the soil, can have but very little in itself. Anything that will give fatness to an animal, must get it from some other place than the air.

Chinese Sugar Cane should be planted as early as possible, if not done before this, so as to be ready for the mill before your cotton-picking presses too heavily upon you. Don't be afraid of the Oriental; with proper management it will pay to make molasses for home consumption, and as a green food for all animals it cannot be surpassed.

Keep an eye to your horses' shoulders; as the weather grows warm, they will scald. Pad your collars, and bathe the shoulders with cold water, or alum and vinegar solution.

Stock require a good deal of salt at this season—add ashes, lime and sulphur occasionally, and it will have a good effect.

Your sows and pigs should be kept in view, and push as many as you can into the wheat-fields after harvest; and, if convenient, have a few acres of sugar cane adjoining the wheat-field. After the gleanings are pretty well over, it will be found profitable to cut and feed upon the stubble—the cane will

fatten the stock, and their deposits will fatten the land.

Don't forget your sheep—count and salt twice a week, and make it a point of etiquette to shoot every dog found strolling about your field—unless at the heels of a master who loves mutton and woolen stockings.

WE WANT CONTRIBUTIONS ON ALL SUBJECTS.

Yes, good reader, nib your pen, go to work, and help us to get up a good, respectable crop of sensible contributions. You, energetic cotton-planter, with all the skill and wisdom which invests the nicest and most important culture of the world, give us your views and ideas of the best modes of tillage, culture, gathering, and preparing your great staple for market. You, methodical rice-planter, investing this most systematic culture in which you are engaged, with the skill of the planter and the exact science of the engineer, tell us of your planting, your flooding, your fixtures, your golden harvests—yea, everything of interest to the world, in your novel culture. You, grain-grower, and lord of extensive fields of wheat and maize, enlighten us as to the operations of your fattening farms. Let every one who knows anything useful to his fellow-man in Agriculture, Horticulture, Mechanics, Domestic Economy, and the applicable useful Arts, communicate such information directly to us, for the benefit of others. Surely, the industrial men of South Carolina can write a sufficient amount of useful matter to fill the pages of the *Farmer and Planter*, without compelling the publisher to make it up of selections—many of which, though suggestive, are not the exact things our readers should be compelled to peruse. There is mind, talent, genius, and observation, amongst the rural population of the South, but there is an evident reluctance to make their views public on the part of many gentlemen, who are not only competent to write, but who would adorn any subject they might treat of. This is false modesty, and we implore all such to shake off their sensibility, and come to the rescue of Southern rural literature. Many good, practical minds, have not been blessed with those educational advantages which add graces to scholarship and adornments to the intellect—but, if these have good suggestions to make, we care not how humble their expression or language may be, they will always be welcome to a place in our pages. We will put their articles in good shape, and it shall be no fault of ours if they do not have a hearing.

Those of our friends who have redeemed their promise, have our thanks, but the press is like the famished Oliver Twist, ever crying for “more.”

PUBLISHER.

FARM ECONOMIES.

Our agriculturists are now on the *qui vive* for concentrated fertilizers, and nothing can be brought before the public, in the way of a new manure, bolstered up by the statements of self-styled analytical chemists, but it straightway receives a full and extensive trial. To judge from the analytical tables, published by way of advertisement, we would imagine that the world was now flooded with fledgeling LIEBIGS, and that fixed facts in manures would soon make their well-known volatile elements available to all who may wish to use concentrated fertilizers. This is all very well; but planters should reflect that there are many elements wasting on their plantations, which, if economized, would save the trouble and expense of purchasing costly concentrated manures. The slaves of the South eat more animal food than any laboring population on the face of the globe. Here, the amount of bones to the amount of population, is greater than is afforded to any other country, from the mere sources of production and consumption. Is their great supply of phosphatic wealth properly economized and applied? In some instances, planters have gathered up the skeletons of departed animals, and, by a crude process, a few experimental applications of bone matter have been made within our knowledge; but here the work rests. There is not, to our certain information, a single bone-mill at work in the whole South. The bones wasted, if preserved, would furnish almost perpetual fertility to thousands of acres. Let every family of negroes be supplied with a bone-barrel, placed in some secure position, where they would be out of reach of prowling curs, and make it a requisition that all bones should be deposited in this receptacle, and it would surprise many to see how great a quantity could thus be collected in a year.—A ton of bones, unground, is worth half as much as a ton of Peruvian guano, and, properly applied, its fertilizing effects, of a permanent character, would be worth double as much. Save the bones of 1859, and inaugurate a new era in fertilizing the plantation, by the application of home-produced elements.

Ashes, where wood is burned to the great extent it is on plantations, is another valuable fertilizing element, which is seldom economized. An ash-house to each family of negroes, is an essential fixture.—Then, under proper restrictions, ashes would be saved which are now generally thrown around the houses, and at such places that their fertilizing effects are lost, or an overdose is given to the ground. In clearing up new lands, the ashes of the log-heaps are left in mass; and, from the overdose, the spot is barren until the alkaline matter is so far exhausted that its caustic effects are not injurious to the crop. We scatter the ashes from our log-heaps

carefully over the surrounding soil, and the benefit must be of a permanent character.

There are other fertilizers available on the plantation, which could be economically applied; but we mention these, the principal and most valuable, feeling satisfied that as soon as the planter has perfected his arrangements for securing these, he will not neglect the minor adjuncts lying ready waiting to his hands. *

SIDE-HILL DITCHING.—A VOICE FROM EDGE-FIELD.

"Vortiger ys y flowe, for drede of him ywys,
To an castel in Yrechenfeld, in the est end of Walis,
Aboue the water of Wye, vp an hul on heyg."

[R. GLOUCESTER, p. 135.]

When we indited our two-sided article on Side-Hill Ditching, in the March number of the *Farmer and Planter*, we hoped to hear a voice from the "ditches," but expected some of the advocates of the system to go into details as to its merits. We confess that we did not expect to be "*pitched into*" by "*a voice*," which, to us, is about as incomprehensible as Deacon D——'s elucidation of an "unknown sound," which he never satisfactorily explained to his congregation or himself. We are sorry that the owner of the "Voice" is in about as bad a predicament as was a waggish medical friend, whose mother carried him to a frolic when he was a baby, and he always asserted he contracted strabismus from trying to listen to two fiddlers playing different tunes at the same time. If our inversion of the term perplexes the "Voice," we regret it, and leave him to adopt which he chooses—for either is, by right of grammar and dictionary, proper.

"What will the Fairfield planters say?" The gullied, bleak, and rugged hills of this cotton-devoted District are stretched out before our eyes as we indite this article; and the failure of the system on thousands of her acres, was the text from which we wrote. In no part of the State has the indiscriminate cultivation of hill-side, with all the aids of ditching thrown in, resulted in such general land-destruction as in good old, generous, hospitable, intellectual Fairfield. So in Chester and Union, and the hilly parts of Newberry. Ask where are the negroes who cleared the lands, and tried to save them by ditching and scratching, whilst they grew enormous crops of cotton, and you will be told that they are in Mississippi, Louisiana, Arkansas, and Texas—some doing well—others contending against floods and famine. We don't know much about "Horn Creek," but, if it is a hilly country, we know that ditches can't save its fertile soil. The Petit-Gulf hills are out of our longitude altogether; but * says, on any soil that should be cultivated, he can plough

deep enough, and horizontalize his rows so as to prevent the washing of the soil, as well without as with hill-side ditches.

We assert now, that, save in the most favorable localities, the example at Fort Hill was not entirely successful. Look at the orchard field, immediately in the rear of the great Carolinian's study, and which, being under his eye more frequently than any other part of his farm, should have been the most attended to. To our eye, Bermuda grass had done more to preserve it than the hill-side ditches; and so with other parts of the plantation.

Our Edgefield friend does not understand our position. It is, simply, that hill-sides, devoted to grass, or allowed to re-forest themselves by second growth, or to remain in primitive forest, would henceforth be more valuable than if cultivated, and attempts at their preservation by hill-side ditching be persevered in.

2d. That all attempts to perfect the complete preservation of hill-sides, by a system of ditches, have partially failed—never having seen a complete success achieved by any planter.

3d. That the increased area of cultivation in our tilled crops will make it more difficult to effect the preservation of the soil by these means.

4th. That deep ploughing will effect more for this preservation of the soil, than hill-side ditches.

5th. That under-draining, in connection with deep ploughing, would add vastly to the productive capacity of our soils.

6th. That there is a sufficient amount of land in South Carolina, level enough for all purposes of tillage, which, if occupied and put under proper cultivation, would allow hill-sides to be devoted to grazing and timber purposes.

When he can show us that there is no lack of grain, animal food, and good timber on the plantations of South Carolina, then we will agree that it will be proper to till, ditch, ruin and devastate, all those productive declivities which reward our labors for a few years, and then are known only in the category of seamed and gullied wastes. Those lands which should bear noble trees, or matted swards of grass, and become the walks of sheep and cattle, would not then fulfill the doom with which the planter's system curses them. Instead of the prowling fox and hare, their tenants would repay him in valuable fleeces, good food and rich composts, to make his level lands produce four-fold crops.

The publisher is allowed to unveil our * to the "Voice from Edgefield," and we promise him a hearty welcome, and good, wholesome walk, whilst inspecting our theories on these matters, put into practical operation. *

DROPSICAL LAND.

It was BYRON who said, when threatened with corpulence, "that he feared to die from *greasy dropsy*." Would to God, the planters of the South were as fearful, on the score of their hydropical fields.—More is lost, to the rich alluvial fields of the South, from a lack of proper drainage, than from all other causes controlling the ills and mishaps of culture.—The present season brings these facts forcibly to our pen's end. The low lands of the State are now laboring under complete dropsy—yes, as disastrous to culture as this baneful disease is to animal life.—Rain—rain—nothing but rain—with a few interludes of stormy, drying west winds, parching up the surface, and developing the clods, until the plough piles them up in the alleys like volcanic scoria.—No deep-tiller sod-plough, no jagged harrow, no genial clod-crusher, can bring such soil into good producible tilth. With the wet below, and the clods above it is all

"Bubble, bubble,
Toil and trouble,"

for man and beast. Scalded below and parched above, the very plants wither and die. The seed-kernel is swelled into unnatural size, and the young shoot meets the fate of many an ill-managed child—hydrocephelates. The alluvial lands of the State, inexhaustible in sources of fertility, would be the most valuable, if the casual influxes of water could be precipitated to such a depth that it would not interfere with the descending roots of plants; and the soil thus relieved of its superabundant moisture, would be rendered friable and easily cultivated. It has been well said, that plants require "*moisture and not saturation; percolation and not stagnation; heat and not cold; aeration of the soil and not suffocation; manure and not poison.*" To effect all these requisites on most of the richest lands in the State, we must apply the simple remedy of effectual drainage; for it will remove the baneful acids, and they will in time be converted into sources of fertility—the amount of labor will be abridged, by the increased friability of the soil, which, admitting air, the invigorating rays of the sun, the genial showers of heaven, and the full benefits of stimulating culture, will not only increase, but hasten the maturity of the crops.

The baneful pests of swamp growth, revelling in their vital element of stagnant water, will die out and be known no more; for truly has Job said—"Can the rush grow without mire? Can the flag grow without water?" In the train of bountiful crops, repaying the planter for his outlay in draining, comes the blessing of good health—a blessing greater than all other boons of bountiful Providence.

A gentleman of Richland District, S. C., has now in operation, on a Congaree River swamp-plantation, a steam-drain tile-machine, and all the necessary apparatus for drainage, under the control of a practically educated Agricultural Engineer. We hope soon to be able to furnish our readers full and complete details of this first systematic operation of drainage on a large scale in the South. He is a pioneer in a great cause—one which will add more than all other experiments to the productive wealth of the State. Drainage, with embankment on our swamp lands, opens a field of enterprise bound in the end to be more productive of wealth and permanent prosperity to the country than all the gold placers of the West. *

A DESIRED ENTERPRISE.

It is with pleasure that we see our townsman, JAMES G. GIBBES, who is the proprietor of the *Columbia Mills*—formerly known as the Saluda Factory—has erected all the necessary machinery for making Woolen Kerseys for plantation use. He proposes to work up the wool of planters; and, finding the woof, does this at the moderate charge of twelve-and-a-half cents per yard. We believe Mr. S. S. SIMS, of Pacolette Mills, also manufactures planters' wool upon the same terms.

A planter who has one or two hundred pounds of wool, can now have his negro clothes made, of a first-rate quality, and that, too, at a cost which will be reasonable. Let all our people go to sheep-raising, and become independent of the miserable dog-tail kerseys which Yankee abolitionists think good enough for negroes to wear. Such goods should be banished from the counters of our merchants, as we consider it an imposition on a negro to make him wear them. Sheep-raising and home-manufactured kerseys should be the order of the day. *

GIVE US A LITTLE CREDIT.

We are not disposed to be captious about small matters; but we believe it is but just to "give the devil his due," and are somewhat inclined to grumble when we see some of our best articles transferred to other journals, without the least hint of where taken from. For instance, that valuable and popular paper, *Porter's Spirit of the Times*, lays before its readers the whole of the article on "Diseases of Animals," which made its first appearance in print in our columns, without giving us a word of credit. Will the gentleman who presides over the destinies of that journal come up to the scratch, and give us a fair fight? He's got somewhat the advantage of us in "weight" and "fancy licks," and we must protest against his trying to force us out of the ring because we do not belong to the "fancy."

PUBLISHER.

A NOVEL SUGGESTION IN SUBSOILING.

The thorough disintegration of very tenacious clay soils, by means of the best subsoil ploughs now in use, is a laborious and expensive operation. The work is so onerous that it deters many persons from experimenting in this kind of improvement. A friend, who, though no planter, is nevertheless practical and scientific in an eminent degree, has suggested to us that subsoiling might be cheaply and effectually performed on the most obdurate soils, by means of small charges of gun-powder, or other explosive substances, applied at regular points, and at the desired depth below the surface of the field. He asserts, that a properly regulated series of charges, thus applied, would upheave and disintegrate a greater amount of soil, and at a cheaper rate than could be done by any applicable motive power now in use. This is indeed a novel suggestion, and will no doubt excite the ridicule of the *stationary engines* who are now standing scratching away in the furrows of 1700.

But, to our mind, it is not only feasible, practicable and interesting, but it is one of those suggestions, which, before twenty years, will be acted on for the benefit of mankind; and then the only wonder will be, that it was not thought of sooner. Torpedo subsoiling—pocket volcanoes, and the other combustible appliances of the operation, will awaken more interest than the application of “electricity to agriculture,” as told by our friend “BROOMSEDGE.” When some bold experimenter blows up his land, we will give the name of our modest friend, who makes the suggestion. *

BARLEY FOR SOILING.

In October last, we sowed three acres of barley upon soil properly prepared by deep ploughing and heavy manuring. To the liberal dressing of compost we added two hundred pounds of guano and fifty pounds of salt per acre. We seeded down two-and-a-half bushels per acre, ploughed in with small ploughs, and crushed level with Crosskill's Clod-Crusher. From the 20th of December to the 1st of March, we daily grazed thirty-five sheep, ten calves, and occasionally a cow, upon this lot. It furnished them all the green food they desired, and they all grew fat, and thrived amazingly. At that date it was high enough to mow with a scythe, and since then we have soiled regularly every day twenty head of horses and mules, ten milk cows, ten calves, our flock of sheep, now increased to fifty head, and over one hundred head of stock hogs, from these three acres, and it has been thrown out with no sparing hand. Every animal has improved in condition daily.

This barley came to our rescue just as our turnips

gave out, and, although by our routine of feeding it has saved us no grain, yet, it has been grateful food to our stock. Our second rule in feeding is, never to stint any animal as long as we have corn in the crib; and our first rule is, always to have a good supply of that essential on hand. *

EAST INDIA OIL.

A VALUABLE RECIPE FOR THE SPRAINS AND CONTUSIONS OF DOMESTIC ANIMALS.

The London correspondent of the *Horticulturist* communicates the formula for making the famous East India Oil, which we publish in this prominent portion of our journal, being confident that it will be worth more than a year's subscription to every subscriber to the *Farmer and Planter*:

“Take 1 quart of linseed oil, 1 ounce of powdered verdigris, beat well together in a mortar; dissolve 1 ounce of camphor, with 1½ ounce of spirits of wine, beat 2 ounces of soft soap in the mortar until it becomes a complete froth; add 1½ pint of water as slow as you can, at the same time keep beating it. Mix all together; add 1 pint of spirits of turpentine, shake it well together, and it is ready for use.”

This is a world-renowned application for all sprains, bruises, &c., and will cure temporary lameness, sweeny, and all similar diseases of domestic animals. Try it. *

COTTON-SEED CRUSHER.

We see that Mr. W. S. HENRY, of Charleston, S. C., has made the desired invention of a machine to crush, and thus destroy the vitality of cotton-seed, preparatory to their application as manure to our cultivated crops. The machine is, no doubt, a cheap and effective one, and by next season should come into general use. The usual mode of destroying the vitality of cotton-seed, by partial fermentation, is a great loss of fertilizing matter, and the too rapid decomposition after once heated, causes their total absorption before they are needed most by the crop at its fruiting stage of growth. This will be obviated by being crushed. We had rather see one seed-crusher invented than a hundred mills to express the oil for export. We want all the seed re-applied to the soil from whence they grew, or fed to cattle and sheep in moderate quantities, to enrich their manure. This seed-crusher is one step towards the ultimate emancipation from the thralldom of the *guano fashion* now affecting the older planting States. *

If you would be pungent, be brief; for it is with words as with sunbeams—the more condensed, the deeper they burn.

The sum of \$50,000 has been subscribed at Vicksburg, Miss., to establish a cotton factory.

For the Farmer and Planter.

MR. EDITOR.—In a recent notice of my last Report in your periodical, I find that an erroneous impression exists concerning the mode of distributing those annual publications. At the last Session the price was reduced to fifty cents each, about one-third of the cost. The fact of charging for them was not occasioned by a penurious disposition on behalf of the Legislature, but simply because this was found to be the best way of distributing the work. A gratis distribution is objectionable, because it interests no one in the matter, and none desiring the volumes would know where to obtain them. *Vide*, as a good instance, Mr. TUOMEY's Report, of which even the author could barely get any copies, though willing to pay for them. By offering these for sale, the booksellers become interested in the matter, being enabled to charge their commissions. The price is too small to offer any obstacle to procuring it with those who care to possess it, nor does it seem to me objectionable that the possessors of copies should contribute this additional trifle beyond those who do not receive any. The proposition originated with myself, and was dictated by the simple desire of placing the work within the reach of all who desire it. I think, however, myself, that it would be well to send copies to other States, and have endeavored to effect this object some time since.

Respectfully yours,

OSCAR M. LIEBER,

State Geologist of S. C.

For the Farmer and Planter.

COMPOST MANURES—A VOICE FROM BARNWELL.

MR. EDITOR:—I have received the numbers of the new series of the *Farmer and Planter*, and am very much pleased with its appearance and contents.—On looking over its interesting pages, the article on "Sheltering Manures," particularly engaged my attention. I am truly surprised that our planters do not turn their attention more to making manures than they do. I am satisfied that every farmer and planter can find enough material on his own plantation to improve his land, if he will only go about it in the right way—not in the way taught him by those who, after sucking all they could from the soil, have rolled over in disgust, and left it because it could yield no more. Such farmers are poor patterns for the rising generation to copy from. The system of farming is changed. Formerly, a man bought a farm with an eye to how long the soil would last; but now, farmers buy those old lands, at low prices, with the intention of so improving the soil as to make them give a remunerating yield, and leave them to their children, increased in value and

productiveness. And this improvement is based upon the application of manures, deep plowing, rotation, and other means, which have been taught us by actual experiments, whether imparted by "word of mouth," or jotted down and sent to us in print by friend STOKES.

It does seem, Mr. Editor, that the following plan for making Compost Manure will pay well: Let any man who pretends to manure his land at all, keep one or two hands, during the slack season on the plantation, with sufficient wagon and mule force, hauling leaves and trash from the woods into his stable, cow-sheds, and hog-pens; and, as soon as this trash is pretty well trampled, let it be taken out and piled away under a covering of some sort, and renew the hauling and cleaning out, as often as the compost is well trodden by the animals. I can assure all that it is a losing business to keep manure in stables and cow-sheds until the animals "bog" in them; at the same time, the litter should be well trodden before removed. If our planters will make the experiment, I am confident they will find their hands and team will pay them better than the same force would in the field.

I am not prepared to say how much manure can be made to a hand in this way, but I intend soon to be able to say, from actual experiment. We all know that everything must have a beginning, and I think the sooner our planters begin to make and preserve manures, the better for themselves, their children, and the State at large. Guano! guano! is now all the rage, but our planters seem not to know that they have as valuable manure at home as the Chincha Islands ever produced, if they will only collect it; but the question with me is, will guano improve land more than Compost Manures, made in our stables and cow-sheds? Will it be more economical to buy guano than make manure at home? From thirty years experience in Compost Manure, I do not believe it will. Another benefit would be derived, in attending to our manure-heaps: the lives of hundreds of poor cows would be saved, for it would be soon discovered that their droppings would well pay for erecting comfortable sheds. Now, some planters may think that cow-manure, made under shelter, is not so good as horse-manure, but I can assure them they are much mistaken—my experience has taught me better than that. I have tried it for years, and I know it will make cotton branch and boll quite as well, but it will not grow so high.

If you think this scrawl worth a place in your journal, it is at your service. I cannot conclude without congratulating you upon the flattering prospects of the *Farmer and Planter*. There can be no doubt that farmers and planters will well sustain it.

HOMESPUN.

HIGH-PRESSURE FARMING.

We beg leave to direct the attention of such readers as have been laboring under the guano epidemic, to a very clear-headed letter from Mr. ED. REYNOLDS, to the Editors of the *American Farmer*, published in our present number.

The planters of South Carolina occupy the position of beginners—sanguine experimenters—eager to win the golden prize. Take care, lest you may realize the truth of the fable—killing the goose to get the golden egg. Mr. REYNOLDS offers you a very convenient stand-point from which you may find it profitable to survey the ground. Guano does not contain all the necessary materials to make crops. It may force the soil to give up its hidden wealth, but it cannot return it.

But read Mr. REYNOLDS' letter, and turn it over in your mind at your leisure. It can do you no harm.

CLOVER.

We would direct the attention of our readers to a very sensible paper on the cultivation of clover, from the pen of Col. McCUE, clipped from that excellent journal, the *Southern Homestead*.

It is refreshing to meet with an article going right to the point, and laying bare the whole facts, without the too common ifs and ands, and this and that, which too often encompass the simplest questions.—Nine out of ten who would sit down to write an "Essay on Clover," would begin with a flourish about grasses, then plunge into "*Trifolium repens pratense*," *Ceratochlio*, *Breviarislata*, or some such confounded hard names, and, after consuming a page in beating about the bush, give us what every man, almost, has already—a theoretical fancy.

Col. McCUE has said all that was necessary to say—and we beg leave to call the attention of our readers to the fact—that clover cannot be grown like broomsedge, by being turned out, like crop-grass, by incessant warfare with its progress, or *just so*, like Bermuda, but that it requires rich soil, well prepared. It must be well managed, in the selection of good seed, in the sowing, and the nursing when young and tender, and it will pay well for all your trouble after it gets old enough to stand alone. It is the king of all grasses, and deserves every attention to secure success.

In our climate, under a burning sun, and subject to Summer droughts, clover will, perhaps, be always confined to fancy patches; and no fancy patch will pay better. One of the greatest difficulties is, the procuring of good seed. Much of the seed in market is faulty, while we may say nearly all contain the seeds of noxious weeds. Wild carrot and plantain are most common, and, in a few years, will ruin the pasture. The plantain is almost inextir-

pable; nothing will eat it; it *will* make its seed, which are innumerable, and grow under all disadvantages. It has, however, one virtue—it *will* hold the soil against all enemies, and *can* be subdued by cultivation in cotton. On the red clay lands of upper South Carolina, clover can be grown advantageously by careful management. The land should be manured, and cultivated in cotton, so as to rid it of all weeds and grasses; sow in February, upon wheat or oats, at least one-and-a-half gallons per acre, of good seed, and keep the hoof of every animal off it until Winter, and don't fall into the common error, that clover cannot be hurt, and turn every living thing on it for the year round. When the wheat is harvested, a dose of ashes and plaster will act like a charm upon the clover. It don't cost much. Try it.

THE CULTIVATION OF CLOVER.

We commend the following essay on the important subject of "the cultivation of clover," to the serious consideration of our readers. The author, Col. McCUE, is entirely at home on the subject.—Having been a successful cultivator and a winner of the premiums of the Virginia State Agricultural Society for the largest production per acre, and the best specimens of seed, he speaks of the profit and advantage of this important branch of husbandry from his own personal knowledge. His counsel ought, therefore, to be authoritative with those who would conform their operations to the suggestions of enlightened experience gained from successful practice:

Too little attention has been bestowed on this subject, and the fear is, that in our efforts to *cheapen* guano, and increase our crops of tobacco, corn and wheat, we will continue to lose sight of these, the *most important fertilizers*—the grasses. No one can doubt that clover is the *Sampson*, if not among the grasses, certainly among the fertilizers.

Much of the difficulty attending the cultivation of clover, according to the experience and observation of the writer, is attributable to the defectiveness of the seed sown. In the Valley counties, where it is cultivated, the farmer raises his own seed year after year on the same soil. Every succeeding crop exhibits a falling off in the vigor and luxuriance of the hay, and an increasing tendency to deterioration in the quality of the seed, consisting of light, chaffy grain, often destitute, in a great measure, of the germinating principle.

This seed transported to the counties east of the Ridge, cannot recover by a change of soil and climate, although a slight improvement may be visible. *There* the practice is seriously defective, in putting on too limited a supply of seed, and in pasturing stock upon the young growth and keeping it down. In the Valley an occasional introduction of the best quality of seed from Pennsylvania or Maryland, is desirable. Greater pains should be taken to keep the seed free from the noxious weeds which now, alas! are spreading with alarming rapidity over the State. To insure a certain stand of clover anywhere, a more liberal supply of seed is necessary. From a bushel to a bushel and a half to eight acres is far

more economical than to spread *one* bushel over *ten* acres, as is too common. To guard against the killing out in Winter, it is a safe precaution to sow part in the Fall and the remainder in the Spring. Clover delights in a *deep* soil—and hence the feeble and meagre crops formed on land badly prepared. The writer has succeeded best on land broken up to a depth of twelve and thirteen inches, the seed sown with a seed-sower attached to a Pennock drill, and followed by a cast roller of eighteen hundred pounds weight. Too much care cannot be taken to guard against the daisy, plantain, blue thistle and other noxious weeds, and a heavy penalty *ought* to be meted out to him who would knowingly sell to his neighbor, or send from home, seed abounding in such filth. Legislative enactments ought to be brought to bear against this evil. If the man is culpable who knowingly permits his cattle, afflicted with a contagious disease, to run at large and impart it to his neighbor's stock, how much less guilty is he who sells to his friend or acquaintance grass seeds containing those pests, which, if once they gain a foothold, retain it, to the injury of the farmer and the soil, for generations to come?

If lands, designed to lie for some time in grass, are sown in clover, it is best to put one-third part of timothy with two-thirds of clover, thereby insuring a better quality of hay, and also making a firm and stiff sod.

Plaster and ashes should be sown early in the Spring on the young clover. It should be mixed in the proportion of one-third of the former to two-thirds of the latter, and sown at the rate of a bushel per acre. This will not be found too heavy. When clover-seed is intended to be saved, the clover should be cut before harvest, to give time to the second crop to ripen before frost. Often a heavy crop of seed is obtained after pasturing off the first crop. A too luxuriant crop of straw is unfavorable to a full crop of seed. So soon as the greater part of the heads have become brown, it is important to commence cutting the seed, which is most speedily secured by using a scythe with two fingers attached, and cutting two swathes together. The labor of raking up is much lightened in this way, and the straw gathered closer than by any other plan. The straw should lie some days in swath, to dry the heads thoroughly, so as to facilitate the threshing of the seed. This may be done either by treading out with horses or threshing by a machine. To those not judges of *good* seed, it is suggested that a plurality of dark-colored or purple grain is generally sound and heavy, and sure to vegetate. The presence of light and chaffy grains, and too much dust and dirt in seed offered in market, may be most easily detected by wetting the finger and thrusting it into the bulk, when the good seed will usually fall off and leave the light grains and the dirt adhering.

Fearful that this essay may be drawn out to an unsuitable length—conscious of its defects, and yet hoping that it may serve a useful purpose in attracting attention to a subject which lies at the foundation of Southern agriculture, the writer most respectfully submits it to the indulgent consideration of his brother farmers. J. MARSHALL McCUE.

RICE PUDDING.—Quarter of a pound of rice, one quart of milk. Stir well while boiling. When nearly cold add one quarter pound of butter, same of sugar, six eggs, spice to taste. Bake one hour.

CURE FOR SHYING.—If a lady's horse be addicted to shying, I will give her a sure and simple cure for the same; one which I have never known to fail.—Let us, for instance, suppose the existence of a heap of stones on the near side of the road. The horse sees an indistinct grey object, and prepares to shy at it. The moment he shows such symptoms, let his fair rider turn both her eyes on exactly the opposite side of the road, and look steadily away from the offending heap, and I'll engage that the horse will walk quietly by. For many years I have ridden horses of all tempers and dispositions, some of them much given to shying, and have never yet found this simple remedy to fail in its effect. Let those who scoff at me try it. The reason is this: The human eye has, doubtless, a great influence on all animals, and there is a strong and secret sympathy between the horse and his rider. The horse sees an indistinct object, and looks doubtfully at it; his rider becomes alarmed, imagining that the animal is going to commit some eccentricity; the fear is communicated to the animal, and he starts in terror from the object which has frightened him; whereas, if he finds that his rider sits unmoved and unconcernedly, he regains his confidence, and goes on "in the even tenor of his way." I believe that one-half of our horses are ruined for life by being "hit over the head" by grooms, to cure them of shying.

VEGETABLE GARDEN.—There is always more or less green vegetable refuse in gardens during summer, such as potato-tops, pea-haulm, and similar matter, which is either allowed to remain on the ground and dry up in the sun, or deposited in a heap for the purpose of forming manure. A better disposition of such products is to dig them at once into the soil; there are always some spare corners or uncropped spots, which may be enriched by becoming a place of deposit for rubbish of this kind. Even the short grass from lawns may be covered at once, if no more useful disposition can be made of it; such as mulching between the rows of vegetables, or over the roots of recently-planted trees. There is much loss of enriching matters by allowing these incidental accumulations to lie on the surface; and, even as a matter of neatness and regularity, they should at once be disposed of, and rendered useful for future crops.—*Horticulturist*.

SCIENTIFIC CONCLUSIONS.—Scientific experiments, as well as theoretical hypothesis, have established the following positions. We believe they may be set down as agricultural truths:

Substances, rich in nitrogen, increase the verdure, lengthen the straw, and promote and prolong the growth of plants.

Lime generally shortens the period of growth, strengthens the stem, and hastens the time of ripening of both corn and root crops.

Saline substances, applied alone, and even comparatively in minute quantities, on some soils, produce a remarkable effect, on other soils but little.

While one substance, applied alone, produces little or no effect, a mixture of two or more may give rise to striking differences.

Phosphoric acid, lime, and some form of organic matter, are essential constituents of such a mixture as shall everywhere and under all circumstances produce a marked, beneficial effect on old, worn-out land.

Gorticultural and Pomological.

WILLIAM SUMMER, EDITOR.

A HANDSOME SUBSCRIPTION.

A gentleman of the upper-country, who is most intimately connected with the Agricultural progress of the State, has sent us ONE HUNDRED DOLLARS as his subscription to the *Farmer and Planter*. This liberality gives us assurance that the conduct of this journal, and our exertions in behalf of the good cause of Agricultural Literature, are appreciated, and nerves us for greater endeavors to make it, both in matter and typographical execution, second to no paper of the kind, published in the country. We regret that we are not permitted to mention the name of the donor—but we can say with truth and pleasure, that he is a noble son of South Carolina, and every pulsation of his heart beats in unison with the greatest and best aspirations of her people. With such friends to sustain her interests—associated as he is, only with her Agriculture, we have no fear for her improved prosperity; for such examples of patriotic devotion, coupled with the true spirit of enterprise, are the only indexes to point to the greatness of our future. May he live long to enjoy the happiness by which he is surrounded, and reap the rewards of an honored career.

PUBLISHER.

WORK FOR THE MONTH.

The principal sowing season for general crops may be considered as past, but there are many kinds of seeds which may still be sown this month; and among others, *Cabbage* seed for the principal Winter crop. The beds should be selected in favorable locations, and the plants should be frequently watered in dry weather, with a liquid composed of elder, burdock, and the leaves and berries of the China tree, and to this we would add tobacco. It is said by Raspail, that an infusion of *quassia*, from its exceeding bitter taste, is offensive and destructive to insects, and will do much to prevent the ravages of the Cabbage flea, and the striped bug, so injurious to melon and cucumber vines, during this month. Finely-powdered charcoal dust, sifted over the plants, is also a good preventive. A little timely care now will do much to arrest these pests.

Early Cabbages will now require frequent hoeings, and occasional waterings—and in this observe our directions for watering. Cabbages should be hoed in the morning and in the evening, but never during the heat of the day. A German gardener, who observed this rule, grew finer Cabbages than his neighbor, who planted the same seed and manured in like

manner, but who did not observe this particular in working.

Carrots, *Parsnips*, and all close crops, will require thinning out to proper distances, and should be carefully worked. If this is properly done, they will require very little more after-culture than to take out the weeds that may spring up between the rows.

Beets will now require particular attention, and should be worked over nicely. If it is necessary to transplant *Beets*, or any other plants, do this, if possible, during showery weather; although most persons transplant when the ground is too wet. It is advisable to take up the plants and set the roots in water, in the shade, until evening; then dip the roots in a rich puddle of garden-mould, and transplant. They will have absorbed sufficient moisture as to wither very little the next day.

Continue to plant *Melons*, *Squashes*, *Cucumbers*—*Corn*, for roasting-ears—*Okra*, for a succession.—Set out more *Tomato* plants and *Peppers*, and sow more seed to set out the last of June and July.—Look well to the garden, and if you have neglected to sow the pepper-seeds, do not put it off any longer. Remember that we are favored with a genial climate, where Nature does much for us, and if we hoe and weed industriously, and water when requisite, and if you have anything in your garden that you desire to force forward, give it a good dose of soap-suds saved from the wash, to which add a little gypsum, twice a week for the next month, and you will be sure to see your labor rewarded by a growth of the plants that will more than fulfill your expectations.

Sweet Potato beds will be greatly benefited by this treatment. Continue to set out sprouts, observing to puddle the roots before putting them out.

Strawberry beds will require copious waterings once a week, should the weather be dry, to secure good crops of fine fruit.

THE ORCHARD.

The principal thing to be done this month is mulching; this consists in covering a space around the tree—say as wide as the hole dug to receive the roots when planted—with coarse litter, straw or half-rotten leaves, to restrain evaporation and preserve moisture. During dry and warm weather, where mulching is not practiced, the tree and the fruit are checked in growth, and the early fruit is often small and inferior—but with this attention it will be improved in size and flavor.

Should *blight* in the apple or pear trees appear, cut it off promptly and fearlessly a few inches below the affected branch, and the remedy at this season is certain.

The question is, did fruit ever swear?

Yes. When the first apple damned the first pair.

THE GRAPE.

We clip the following from the Report of a Committee appointed by the Cincinnati Horticultural Society to investigate the cause of the failure of the Grape crop in that region. As Cincinnati may be considered the head-quarters of American grape-growers and wine-makers, the suggestions of the committee are well worth weighing.

It is a matter of fact, well known to all persons who have noticed the habit of the grape, that very often certain varieties, which have rarely failed to produce good crops, suddenly become diseased, and will not produce good fruit. In our very limited experience, we have been forced to change our opinion of the value of different varieties, after a few years' culture.

The Bland's Maderia was once one of the most certain bearers in the country: for many years past it has fallen into a habit of shedding its foliage when in full fruit—the grape shrivels up and becomes tasteless. We have tried pruning very closely and no pruning, with very much the same results. We have tried cultivation and no cultivation, special and non-special manures, with no better success. There are some vines of this grape in our neighborhood, which the old people tell us, some thirty years ago produced, year after year, immense crops of fruit, which were never pruned, or received any particular care, save the work they got in the garden where the *arbors* stood. We don't know a vine in that neighborhood which now yields a good crop.—So with the Isabella: it has invariably, for four years, rotted, with all our care, on the spot where it once outdid all other grapes.

It is a little remarkable, that this grape should have proved worthless under its native sun, and succeeded so well in more northern latitudes.

With the Herbermont Madeira, our experience has been but little better; and the only grapes we have ever known to escape, invariably, all the maladies of the vine, are the Lenoir and the Naeochee.

In the introduction of fruit-culture, we must expect to have the enemy as well as the fruit. One will follow the other. For the bane we should strive to find the antidote—which will never be done until a more systematic effort is made to find out what are our enemies—what is the cause of our failures, as well as our successes.

“Do not vine-dressers forget, by their mode of pruning, that they are causing a disarrangement in the relative proportion that the roots and branches naturally have to each other, by the immense cutting and hewing of the vine annually, now miscalled pruning? And is the fact well considered, that the Catawba is only a wild vine, and not one that has been brought by the art of man into an artificial condition, as most of the vines of Europe have been? A gentleman told me that he had taken a wild vine

and had subjected it to similar pruning as is at present adopted in the vineyard, and it has not borne a single full-sized bunch since.

“One vineyard that I visited, with a southern aspect, clay subsoil, no stone for ten or twelve feet, vines four feet each way, double-trenched, produced not one-sixth of a crop. The first row of vines, about six feet from the house, was made into an arbor a year ago last Spring, to protect the house from the sun. The vines were allowed to grow with as much wood as possible, to shade the window, and, to the surprise of the proprietor, he got a heavy crop of grapes: but the vineyard yielded only about one-third of a crop. This year, he has made an arbor three parts around his vineyard, and had half a crop on the arbor, and one-sixth in the vineyard.—He intends to take up two vines and leave but one throughout his vineyard—the one to supply the place and canes of three. He further remarks, that short pruning forces too much sap into the wood, from excess of roots, in comparison with the vine; that the canes do not ripen as well, especially on old vines, and are more liable to be injured by severe frosts; and that the bud is started too early in Spring.

“Another German, cultivating between four and five acres, has nearly as many grapes on about three hundred feet of arbor and trellis, and two vines on his house, as he has in the whole of the balance of his vineyard.

“I visited a large portion of the White Oak settlement, and in that district the grape-crop is a complete failure. In one place I observed a few vines had run up some young cherry-trees, and they were loaded with grapes. Under pretence of getting a glass of wine, I went to the house, but found the owner had quite sold out. He had not over one-sixth of a crop last year, and this year it was not worth gathering. He said he was about to destroy his vineyard and plant fruit-trees. I advised him to try another mode of pruning, and pointed to those in the trees as an example. I remarked that there was too much root for the small quantity of wood left on the stakes. Saying something to his son in German, he took me to the other side of his house, where he had ten or twelve vines loaded with fruit. In digging a drain for his cellar, he had cut off the roots from one side of the vines, and my remark, of too large a quantity of roots for the small quantity of vine, led him to see the effects of root-pruning.—He had cut off one-half of the vines and one-half of the roots, and thus had preserved an equal balance of the vegetable power of the vines—thus illustrating, although accidentally, to any unbiased mind, the sure principle of vegetable physiology, proving that a vast deal of labor is annually performed on the vine which cannot be called useful or valuable.”

WHITEWASH.—This article, as ordinarily made, rubs off the walls after it becomes dry, soiling clothes and everything coming in contact with it. This may be obviated by slackening the lime in boiling water, stirring it meanwhile, and then applying—after dissolving in water—white vitriol (sulphate of zinc) in proportion of four pounds to a barrel of whitewash, making it the consistency of rich milk. The sulphate of zinc will cause the wash to harden, and prevent the lime from rubbing off. A pound of white salt should also be thrown into it.

BEES vs. FRUIT.

We call the attention of our fruit-loving friends, who love to smack their lips over a luscious peach, a buttery pear, or an aromatic apple, as much, perhaps, as they enjoy a drink of the methiglum in Summer noon, or hot cake and honey, and advise them to ponder well whether they are not paying too dearly for their sweetening—or whether they cannot devise some method of enticing the bee to more captivating and less expensive pastures than the fruit-blossoms.

We are inclined to the belief, however, that the correspondent of the *American Farmer's Magazine*, from which we clip the extract, has a grudge against bees, and is disposed to come down rather hard on them. Perhaps he has been stung by an angry swarm, as an intruder; or, it may be, that he has had an overdose of honey—but be it as it may—the bee would be a very dangerous customer to fruit-blossoms, if he were bent on mischief. Think of ten hives turning out upon your favorite fruit-blossoms an army of winged suckers two hundred thousand strong, and as busy as only a bee can be.

“Probably but very few bee-keepers know very nearly what their honey costs them, especially if they are engaged in the common interests of horticulture, as fruits and flowers. My reasoning runs thus: If my early Spring flowers, such as snowballs, crocuses, anemones, and dielytrias are gnawed and torn to pieces by the rude struggles of honey-bees, after the sweets they contain, why may not the equally delicate fructifying organs, the pistils, stamens, &c., of apple, pear, peach, plum, cherry, and other fruit-producing blossoms, be disorganized and rendered incapable of producing their legitimate results, causing barrenness of fruit, where abundant crops would otherwise be enjoyed? When pastures and fields are overstocked by cattle, they are gnawed down to a corresponding closeness, and so is the floral domain, when over-fed by bees. My neighborhood was never before so overstocked with these insects as at the present time. Fruit-trees in their bloom are literally alive with them; every blossom has its bee or two, and some have more. Any one who will watch closely the fierce contests of two or more of them in one apple-blossom, for instance, and see how they disorganize the stamens and pistils, and bear away the pollen and the life-blood from the nectary or honey-cup, will not be surprised to see that particular blossom in a few days dry and shrivelled, and falling as an untimely fig to the ground. And this is, more or less, the fate of all the blossoms, unless, by good fortune, *bad bee-weather* seasonably intervenes to save a few.”

BOILED CUSTARD.—Flavor one quart of very rich milk, with a vanilla bean, or lemon, and sweeten well with sugar; boil it in an iron kettle. Beat well the yolks of four eggs, if the milk is very rich; if not, use five eggs. When the milk boils, pour it upon the eggs, stirring them all the time; then put it again upon the fire until it thickens; stir it, and be very careful not to let it boil. Turn it into a pitcher until nearly cold, then pour into custard cups or glasses.

From the American Farmer.

THE USE OF GAS TAR ON PEACH-TREES.

In your issue for this month, on page 209, speaking of the ravages done to Peach-Trees by the “Borer,” you advance the opinion, that the only way to stop him is to catch and kill him. This is certainly an effectual preventive of the future ravages of those so caught; but for the practical usefulness in removing the evil, I question if it be more feasible than the advice to poison all mosquitoes by catching them and dosing them with strychnine. If no other *preventive* can be found for the injury of our peach orchard, I believe this delicious, will be to us “forbidden” fruit, in a few years; for the ravages within my experience have greatly increased.

I came to this conclusion several years since, after having tried, in vain, all the remedies that I could hear of—lime and ashes, slaked and unslaked, soot, sulphur, tobacco-stalks and the decoction of them, with several other applications—all asserted to be protectives. These applications were made around the roots of the trees, both in the Fall and in the Spring—that is, some at each time—and my experience did not enable me to say which was the best; for, as above stated, they each and all failed as preventives; and I never heard they were claimed to be cures.—In fact, I doubt if a cure can be found where the worm has been established, except by catching and killing him, though some experiments of mine cause me to doubt on this point. A *preventive* must be found, if we wish to be rid of the injury. These worms are just as destructive to the apricot as to the peach, whether they be on their own stocks or budded on the peach; and several years ago, having lost all my apricot-trees as fast as they arrived at some four or five years old, and nearly all my peach-trees, either having been killed or very much injured by the “Borer,” I was induced to try “gas-tar” as a preventive. I had never heard that it had been applied to trees, and knew nothing whatever of the effect of it. Indeed, I was not certain that the remedy would not prove more rapidly and more certainly destructive than the disease, and therefore only applied it to four trees, three of peach and one of apricot, grown from the seed. I selected these because they were so much injured that I supposed no harm could be done them by any application. It is known that the borer deposits its eggs at various times from June to October, in the bark of the tree near the surface of the ground, and my hope was that an application of gas-tar to the trees would prevent this. I therefore cleared away the earth from the body and root of the tree, to the depth of some three inches, carefully taking out all the worms I could find, and as soon as the tree dried sufficiently to permit the dirt to be rubbed off, had it well rubbed with a corn-cob, leaving the bark clean for the tar. Then with a paint-brush I had the tar applied as low down as the excavation allowed, and a thick coat to the tree, so as to have it some three inches above the surface of the ground. After about a day, the holes were again filled with earth and so left.—My first experiment was about August, 1855, and the apricot-tree died soon after from injuries already received; but the peach-trees all improved in some few weeks. In the Spring of 1856 I examined them and found them clear of worms, and finding the tar had not injured them, I determined to paint all the peach, apricot and plum-trees in my garden, of suf-

ficient size to bear fruit; and about the middle of May I did so. Some of the trees were carefully cleaned of worms, and some few were left as found, coating over with tar where the worms appeared to be. The trees were left until the next Spring, when I again examined them. I then found the whole of them free from worms, and in a thrifty and vigorous state.

I did nothing further to them, but painted in the same manner some of my younger trees. Last Spring, 1858, I again examined all, and found that of twenty-three peach-trees the worms were only in *two*, and I found four in one and two in the other.—These were two of the trees which had been painted *two* years before, and were both in very low and wet soil. Again I had all painted, and no one could desire trees more beautiful and more free from worms. Such is my experience, and I hope more extended experience may sustain this prescription as a *preventive*. I think the trees should be painted every year, from the middle of May to early in June, and should this very simple means secure our trees from these ravages, it will certainly be in the ability of all to have in perfection this most delicious of our fruits.

PRUNING FRUIT TREES.

In the present state of horticultural knowledge, it is about as important to tell the owner of an orchard, seasonably, what he should not do, as what he should. Much skill as it requires to plant a tree, it requires still more to prune it so as to help its growth and fruit bearing. Fortunately for the nursery-men there is so little skill in planting, that a majority of the trees removed from the nursery never call for pruning. The sunbeams of their first season remove every redundant twig with a thoroughness that the most rabid pruner might envy.—A small sample of undersized bean poles is the Autumn inventory of what went upon his plantation in the Spring as a splendid lot of the choicest fruit-trees, purchased at one dollar each, and richly worth two. These, of course, will not want further pruning. But you have an old orchard, with some dead limbs and a thick, heavy growth of sprouts, and so much top that there is no chance for the sun to get in to ripen the fruit; what is to be done with it?—Do not infer that because you have a keen-edged knife and a sharp saw, that the best use you can make of them is to go into the apple-tree tops with them in April. The truth is, February, March and April, are the worst three months in the year for this purpose. Lay your pruning tools upon the shelf for the present, and walk with us to your neighbor's orchard. This was pruned last April. You see that many large limbs were removed, and that the old wood is now nearly as black as if it had been painted, and that a long, black stain extends far down the amputated limb, greatly injuring as well as disfiguring the bark. Examine the wood closely, and you will find it has already begun to decay.—The whole tree has received a shock by this untimely pruning, and years will not repair the injury.

The best time for a general pruning is at the close of the first growth of Summer, which is from the 15th of June to the 15th of July. Then the leaves will take care of the flowing sap, and all small wounds will be rapidly healed over. The large wounds may be closed by a coating of tar, thickened with brick-dust, applied warm. Gum Shelac is good, but is more liable to peel off than the tar mixture.

Never cut a limb for the sake of using your tools. The tops of apple-trees do not require severe thinning in our hot Summers. Nature understands the wants of the tree often much better than the gardener who has had his training under the dripping skies of England. The thick limbs and foliage are needed to protect the trunk, the larger branches and the fruit. You will find your fairest specimens in the top of the tree, and partially shielded from the sun's rays by leaves. Very small limbs, a half-inch through, that cross each other or that interfere with the symmetry of the top, may now be removed, but no general pruning should be attempted.—*American Agriculturist*.

THE POMOLOGIST.

The farmer, after being tired of the stale political compliment, "that he is the bone and sinew of the country," etc., may take new courage as a pomologist, from the following from President WILDER'S Address.—[Ed.]

And how delightful is the employment of the pomologist, going forth among his well-trained trees,

"To visit how they prosper, bud and bloom."

His love is always young and fresh, ever approaching them with keener relish and increasing affection. They, in return, recompensing every kind attention, "clap their hands for joy," and like those flowers of Paradise touched by the fair hand of Eve, *more gladly grow*.

This art is second to no other in rank, in utility and pleasure. No calling is more consonant with the refinement and happiness of a rational being; none better calculated to develop the purest sentiments of our moral nature. "The garden," says Lord Bacon, "is the greatest refreshment to the spirits of man, without which, buildings and palaces are but gross handy-works." "Nothing," said the immortal Webster, "is too polished to see its beauty—nothing too refined to be capable of its enjoyment. It attracts, gratifies and delights all. It is a constant field, where all sexes and ages, where every degree of taste and refinement may find opportunity for gratification." So thought Cyrus of Persia, when he boasted that he planted his trees with his own hands; so Pliny, when he gloried that a Roman cherry was named in honor of his family; so Solomon, guided by Divine wisdom, made for himself, as a source of his purest pleasure, "gardens and orchards, and planted trees of all kinds of fruits;" so Dioclesian, sated with the highest honors of regal power, when he wrote to Maximian—"Were you to come to Salona, and see the fruits which I cultivate with my own hands, you would no longer talk to me of empire." So say we, and all others who, having retired from the thoroughfares of the busy mart, and from the conflicts of political ambition, have drunk from these pure fountains of social joy, and eaten these ambrosial fruits of rural life.

No wonder, then, that the praises of this pursuit have been celebrated in prose and verse, from the humblest peasant to the highest potentate; from the heathen mythologist to the sweet Psalmist of Israel.

From scenes in the garden, from Eden to Gethsemane, have been drawn the most exalted and sublime conceptions, the most sacred and divine communings that have ever moved the human heart.—

The good Wilberforce, long after he was unable to walk, was drawn daily in his carriage to his favorite grounds, where he could commune with his Creator, and admire the beauty and glory of his works. "I am," said he, "very fond of the garden. The corn and vegetables I look upon as the bounties of Providence, but the fruits and flowers as his smile." This sentiment animates the breast of childhood, grows with our growth, and strengthens with advancing years—

"Maintains its hold with such unfailing sway,
We feel it e'en in age, and at our latest day."

From the Plow, Loom and Anvil.

PLANTS MUST HAVE FOOD.

Vegetation annually appropriates to itself, and removes from the soil, a portion of nutritive principles therein contained, and if they be removed without compensation in some way, barrenness will ensue. Upon the facilities which the farmer may be able to command, to secure an adequate supply of food for his crops, his success must in a great measure depend.

Manure is a term of broad application. It was formerly confined chiefly to the excrements of animals, but now has a wider signification, and may be understood as embracing any animal, vegetable, or mineral matter, capable of improving and fertilizing the soil, or of correcting its faults and supplying its defects. Whether artificial fertilizers may or may not be profitably employed, is of far less moment for us to understand, than how to make the most of home resources; the true policy being to increase the productiveness of the farm from within itself.—To accomplish this, every source of fertilizing material upon the farm should be made to contribute, and care should be taken that nothing be wasted.—Not only should the solid excrement of animals, which too often is the sole dependence of the farmer, be properly cared for, but special efforts should be directed to the liquids also, which are not only more exposed to waste, but possess a superiority over others, which renders their loss irreparable. An eminent agricultural writer says: "When it is considered that with every pound of ammonia that escapes, a loss of sixty pounds of corn is sustained, and that with every pound of urine a pound of wheat might be produced, the indifference with which these liquid excrements are regarded is quite incomprehensible." Another writer says: "The quantity of liquid manure produced by one cow annually, is equal to fertilizing an acre and a quarter of ground, producing effects as durable as do the solid evacuations. A cord of loam, saturated with urine, is equal to a cord of the best dung. If the liquid and solid evacuations, including the litter, are kept separate, and soaking up the liquid by loam, it has been found that they will manure land, in proportion by bulk, of seven liquid to six solid, while their actual value is as two to one. The simple statement, then, in figures, of the difference in value of solid and liquid evacuations of a cow, should impress upon all the importance of saving the last in preference to the first."

Excrementitious matter, whether solid or liquid, is by no means our only source of food for plants.—Almost every farm possesses an indefinite, and oftentimes a most abundant supply, in the deposits of decayed vegetable matter, known as muck, or peat.—

This, to be sure, in its natural condition, is not readily available by plants; they would relish and thrive upon it about as well as we would on raw potatoes, but, nevertheless, the food is there, and only needs due preparation to make it both palatable and nutritious. Muck or peat is also of great value, and almost indispensable as an absorbent of liquid manure, and of the gases generated during decomposition.*

In this way it not only proves a most effectual and economical means of preventing waste, but is itself, in so doing, modified or changed so as to be converted into valuable and available manure.—Muck, treated with ashes, is found to do exceedingly well. Another mode of treating it, which has many advocates, is—to slake quicklime, with a saturated solution of common salt, and mingle with the muck, in the proportion of one cask of lime to a bushel of salt, mixed with a cord of muck. Thus prepared, it is not a simple mixture of lime, salt, and muck, but during its preparation as stated above, a decomposition of the salt takes place, alkali is liberated equivalent to the ashes used in the other case, and by its action the vegetable food in the muck is rendered soluble, and thus made available to plants.†

* Too much can hardly be said of the value of dried muck, to be thrown into the stalls, as an absorbent, for the double purpose of adding to the value of the manure, and of purifying the air of the premises.

† If convenient, it would be well to prepare this some weeks before applying it, and if turned over a few times, all the better.

DOMESTIC WINES.

The rapid progress which vine-culture is making in this country, is one of the best guarantees against the serious evils of intemperance, and this progress cannot fail, ere long, to give cheap wines. American champagne is gradually obtaining the reputation of being the purest effervescing wine in the world, and if, as Mr. Longworth says, we have five thousand varieties of native grapes—all of them free from the oidium, or grape disease, which is spreading over every corner of Europe—it will be seen that the West has in reserve an enormous field of productiveness to fall back on, as population grows dense, and profitable investment for capital is required.

There is an absurd idea prevalent that wine cannot be profitably raised in this country; that labor is too dear, and European opposition too great. On the contrary, wine raising is at this instant the most profitable branch of Agriculture in America. It will pay from one to three hundred dollars an acre, yielding a higher profit on capital, skill, and labor invested, than any other planting.

The wines which can be most easily raised, are like those of Germany, light and very innocuous.—We often hear it said that there is no drunkenness in France, but drunkenness is even rare among the wine-drinking Germans of the Rhine. Liebig, the great chemist, declares that these people, far from being injured by their wine, owe to it the health for which they are so famous, there being no place in the world where there is so little demand for apothecaries' wares. But the reader will recollect that these wines are very different from those of other nations, being no more intoxicating to those familiar with them than common claret. When attention is more generally devoted to wine culture, we shall

probably see wine as cheap here as cider, and strychnine whisky and fighting brandy at a discount.—Excessive use of ardent spirits is a great cause of national suffering; anything which will do away with it, or modify it, can hardly fail to be regarded as a blessing.—*Petersburg Express*.

From the Southern Homestead.

A PREVENTIVE FOR WOOLLY APHIS.

BY WM. P. HARDEN, DOWNING HILL NURSERY, ATLANTA, GEORGIA.

This is, undoubtedly, the greatest enemy known to the apple-tree. They seem to destroy the tree by attacking the roots under ground, and not the tree above ground, as is supposed by many. As far as my observation goes, they are perfectly harmless as long as they confine themselves above ground to the body and branches of the tree; or, at least, out of hundreds of trees that I have examined that showed signs of injury from these insects, not a single one but had the aphis in abundance among the roots.

After experimenting with various substances, in search of a remedy, without success, I tried pulverized charcoal, (the kind used was the cinders from the pipe of the common locomotive,) with complete success. This remedy, though slow in its action, is certain. It was applied by removing the earth from the roots around the body of the tree, then freely applying the charcoal. No danger need be apprehended of applying too much, as it is entirely harmless to the tree, yet so offensive to all kinds of insects, or even animalculæ, that they cannot live long in, or even very near it. Charcoal, being an indestructable material, continues to act for an indefinite time, thereby becoming a preventive as well as a remedy.

Again, it not only acts as an absorbent, retaining the volatile gases (valuable food for plants that would otherwise be lost), but makes one of the very best substances ever used for mulching, as it is, for reasons given above, entirely free from the objections that obtain to ordinary substances used for that purpose, which afford a kind of harbor or protection for different kinds of insects that finally attack the tree. This remedy has been tried on the apple-tree. It is very probable that it would protect the roots of this kind of fruit from the various insects with which they are infested.

LIMA BEANS.—We see that some of our brethren of the press are recommending the pinching off of Lima Beans when six feet high, instead of permitting the vines to run around poles of fifteen feet.—This is an excellent practice, and was first suggested by ourselves, which seems to be forgotten by those who then repudiated and now adopt it. Such treatment causes the vine to grow to a much larger size, throwing out side-shoots with a larger crop of fine fruit, and to perfect the beans before frost, instead of continuing to bear indefinitely, and to perfect but few. This is an excellent crop when so managed, and always profitable. It only requires full fertilization and thorough disintegration of the soil to raise a pint or more of Lima Beans per pole, and with such a crop sold at six dollars per bushel in the dry state, the yield will equal \$400 or more per acre in value.—*Working Farmer*.

Sulphuric acid has a beneficial effect on leguminous plants.

WASH FOR FRUIT-TREES.—We would remind our readers again of the soda wash for fruit-trees, which we have so often recommended. This is the time of the year for its application. Heat sal soda to redness, so as to drive out the water of crystallization and carbonic acid; then dissolve the caustic soda in water at the rate of one pound to the gallon, and apply it when cold to the trunks and larger branches of fruit-trees. It will destroy cocoons and ova of insects, mosses of all kinds, decompose dead bark, and present a fine glossy surface, not likely to be attacked by insects. Unlike potash, it does not destroy any living portion of a plant, while it decomposes the dead portion more readily.—*Working Farmer*.

SALT FOR HORSES' FEET.—Common salt absorbs moisture from the atmosphere, hence it has been in some instances applied with great success for keeping the hard bound hoofs of horses moist. The hoofs of some horses become dry, and oftentimes crack, thereby rendering them lame, if the animals are driven on hard roads. By bathing the hoof and fetlock joint with a salt brine three times a day, lameness from the above cause will be avoided. It is a common practice with some blacksmiths to rasp cracked hoofs in order to render them more tough, but salt brine is far superior to rasping for effecting this object.—*Ex*.

RURAL BOOK-TABLE FOR MAY.

From C. M. SAXTON, 25 Park Row, New York, we have received the following valuable works:

1.—*The American Fruit Culturist*; containing directions for the propagation and culture of Fruit-Trees in the Nursery, Orchard, and Garden, with descriptions of the principal American and foreign varieties cultivated in the United States. By JOHN J. THOMAS. Illustrated with three hundred accurate figures. 1 Vol., pp. 422.

This is one of the many valuable works on the subject of Fruit culture, with which the horticultural world is now supplied. Mr. THOMAS' work, for his region, has long been one of the standard authorities, and in all the details of tree rearing and management, furnishes good practical information. This is a new edition of his work, brought down to the present date by a valuable Appendix, giving new and popular varieties of Fruits in the North, and very complete in illustrations, both of Fruits and the manipulations of propagating, transplanting and training trees. The present edition is afforded at the low price of \$1.25.

2.—*The Produce Reckoner*; Showing the value by pound or bushel of all kinds of grain, &c. Also, a ready reckoner for Merchandise; a table for computing interest, &c. By W. ROBBINS. 1 Vol., pp. 118.

A valuable little book for every day's reference; of utility to the farmer, the mechanic and the merchant, and to all buyers and sellers of farm produce. Price 50 cents.

3.—*Youatt on the Structure and Diseases of the Horse, with their Remedies*; with practical rules to Buyers, Breeders, Breakers, Smiths, &c.; brought down by W. C. SPOONER, M. R. C. V. S. To which is prefixed an account of the Breeds in the United States, by H. S. RANDALL, with numerous illustrations. 1 Vol., pp. 483.

A new edition of YOUATT's celebrated work, simplified for general use, is always welcome to the lovers of this noble animal. The present is in the popular style so convenient for reading, and commends itself to all wanting a companion of reference for the Horse. Price \$1.25.

4.—*Practical American Cookery and Domestic Economy*; compiled by ELIZABETH HALL. 1 Vol., pp. 626.

This is one of those ever useful books, which teach, to old and young, the novelties and economies of household *menage*, and prove ever acceptable to thousands of inquirers and seekers in the various and varied details of every-day life. Eating is truly as blessed an invention as "was sleep," and every author who may add a simple, wholesome, palatable, well-cooked, or economical dish to the achievements of the *cuisine*, deserves praise at the hands of housekeepers. Digestion has about as much to do with mental formation and improvement as the school-master. We recommend this book to the ladies.—Price \$1.25.

5.—*The Horticulturist, and Journal of Rural Art and Rural Taste*. Conducted by J. JAY SMITH, Monthly. Plain edition \$2. Colored plates, \$5 per annum.

The fourteenth birth-day of this unique and standard periodical shows that it is gathering strength in contributors and beauty in illustration, as it grows older. There is no horticultural magazine approachable to it in America; and the tone of its conduct is decided and firm, whilst it gives fair chances to all who wish a hearing on subjects of horticultural interest. Founded by DOWNING, through various changes, it has always been ably conducted, but never more so than under the talented experience of Mr. SMITH, the accomplished editor of MICHAUX's *Sylva*.

From Messrs. O. A. MOORE & Co., Agricultural Book publishers, 140 Fulton Street, New York:

1.—*Elliott's Fruit Book*; or, the American Fruit-Growers Guide, in Orchard and Garden. Being a compend of the History, modes of propagation, Culture, &c., of Fruit-Trees and Shrubs, with descriptions of nearly all the varieties of Fruits cultivated in this country, notes of their adaptation to localities and soils, and also a complete list of Fruits worthy of cultivation. 1 Vol., pp. 528.

In the present revised fourth edition of *The Western Fruit Book*, Mr. ELLIOTT has also contributed a valuable addition to the standard manuals of the North and West. The illustrations of practice, in propagating, training, &c., are those usually given in similar works, but in illustrating the fruits themselves, and giving correct drawings of outline, core, seeds, and kernels in the same cut, he has achieved a novelty of delineation conveying correctness of variety, so as to render identity inevitable. In this particular, all fruit-growers are under great obligations to him. Identifying fruit is a great desideratum, not only to nursery-men, but amateurs, now, when there is such confusion in nomenclature—and it requires a horticultural Champollion to determine the proper name, amongst the hosts of synonyms.—Mr. ELLIOTT has paid considerable attention to the Southern varieties of fruit, and such as succeed here—but our changes of climate, seasons, and natural surroundings, are such—and even here there is so little reliance to be placed on the opinions of fruit fanciers—that it will, we fear, be a long time before a good fruit-book will be compiled for the South.—Every man who grows fruit, thinks he has the best, and the disqualifying habits of smoking and chewing tobacco, do not add much to discriminating its most exquisite qualities. Think of a Committeeman's throwing down a segar, or ejecting a quid, previous to deciding upon the merits of an aromatic apple, a luscious peach, or a melting pear. Judges of fruit should be selected in strict reference to anti-whisky and tobacco habits. Mr. ELLIOTT's valuable book is sold for \$1.25.

2.—*A Treatise on the Artificial Propagation of Fish*; with the Description of such kinds as are the most suitable for Pisciculture, &c., &c. By THEODATUS GARLICK, M. D. 1 Vol., pp. 142.

Since the successful experiments of MM. REMY and GERIN, of France, in Pisciculture, the world has become alive to the importance of this department of industry, soon to command its influence in the economies of the routine of domestic affairs. Very successful experiments surround us on all hands in South Carolina; and, in addition to the valuable essays on the subject, by Dr. BACHMAN and Mr. WOODWARD, before our State Agricultural Society, this production of Dr. GARLICK's is a desired contribution to the science of Artificial Fish Breeding.—Dr. GARLICK's attack on Dr. BACHMAN is uncalled for, and is in as bad taste, and as odorous, as his own name. His objections to the hasty contributions of a veteran in science to a good cause, might have been equally effectual if couched in more generous language.

Fast men, like fast rivers, are generally the shallowest.

Domestic Economy, Recipes, &c.

MR. EDITOR:—Permit me to give you a recipe for the destruction of the little insects, or worms, that are so numerous and destructive to young (and old, too,) Peach and other fruit-trees. It is simply to apply a strong decoction of aloes and water to the diseased part of the trees, which will not only destroy the insects at the roots, but will effectually cleanse the tree during the ripening of the fruit.—Say one ounce of aloes to five gallons of hot water, and apply about one pint lukewarm, and repeat in about one week. Try it. A. J. S.

TO MOTHERS.—A medical friend requests us to publish the following prescription, which has proved of great use in all inflammatory attacks of the chest, head or bowels. It is recommended by Raspail, one of the most famous cotemporary chemists, and formerly a member of the French Provisional Government: Dissolve one tablespoonful of coarse salt in a quart of cold water; add to it strong Liquor Ammonia half an ounce, and one-fourth of an ounce of Spirits of Camphor. Shake well together, and keep always ready for use in a well stopped bottle. It is applied externally, with several thicknesses of linen or cotton fabric, and will insure more speedy and uniform success than all other means adopted by the generality of medical authority. As a wash in fevers it will answer admirably. It should be kept always on hand as a domestic remedy.

TO PRESERVE LARD SWEET.—Instead of putting it into large vessels, put it into stone crocks, or jars, of from one to four gallons each; when cooling or thickening, put in your salt, which will mix through the lard, instead of settling at the bottom of the crock. The next day take clean bits of cotton cloth, rather larger than the top of the vessel, and after putting it smoothly down, and pressing the edges snugly around, so as to exclude all air, pack in a close layer of salt, then lay over another piece of cotton cloth, and turn over it a plate or a cover which will fit tightly, then lay over two thickness of paper, and set it in a cool, dry place. In this way I have kept lard perfectly sweet eighteen months.—Crocks of butter should be kept in the same way.

CRANBERRY PIE.—Cranberry pies need very little spice. A little nutmeg or cinnamon improves them. They need a great deal of sweetening. It is well to stew the sweetening with them. When cranberries are strained, and added to about their own weight in sugar, they make very delicious tarts. No upper crust.

RICE AND APPLE PUDDING.—Boil half a pound of rice in half a pint of milk till it is soft, then fill the dish half full of apples which have been pared and cored; sweeten with sugar or molasses; put the rice over the fruit as a crust, and bake one hour.

TO BROWN COFFEE.—Coffee should be browned gradually, and only to a light chestnut brown, so that when it is ground it will be lively and fly around the sides of the cup.

LEMON PIES.—Beat with the yolk of four eggs, two tablespoonfuls of melted butter, four of white sugar, the juice and grated rind of two lemons.—Put into a rich paste and bake. Then beat the whites to a froth, adding two tablespoonfuls of grated sugar. Spread on the pies when done. Put them in the oven and bake again for three minutes. The above is for two pies.

MOCK APPLE-PIE.—One teaspoonful of tartaric acid, one cup of sugar, one cup of bread crumbs, one egg, one pint of water, and nutmeg, or any other spice to suit the taste. This will make three pies.

ORANGE TART.—Squeeze two oranges and boil the rind tender, add half a teacup of sugar, and the juice and pulp of the fruit, an ounce of butter; beat to a paste. Line a shallow dish with light puff-crust, and lay the paste of orange in it.

POULTRY STUFFING, No. 1.—One-half a pound of clear, fat pork, chopped fine; eight or ten crackers, pounded fine; one or two eggs, one cup of flour, one pint of milk, or water, sage, pepper and salt to your taste.

STUFFING, No. 2.—Take light bread or crackers, chop them fine, put in a small piece of butter or a little cream, with sage, pepper and salt; one egg, a small quantity of flour; moisten with milk.

CORN MEAL PUDDINGS.—To seven heaping tablespoonfuls of Indian meal, add one cup of molasses, a little salt and butter. Stir all well together, and just as it goes into the hot oven, put in a cupful of cold water or milk. Bake three-quarters of an hour.

RHUBARB TARTS.—Peel and slice the rhubarb, sweeten to taste, and fix as a gooseberry tart. They are very delicious.

CUSTARD PUDDING.—Two spoonfuls of flour, six eggs, one pint of cream, a little sugar, one nutmeg. Boil half an hour.

BOILED PUDDING.—One quart of milk, nine eggs, seven spoonfuls of flour, a little salt. Put in a bag and boil three quarters of an hour.

POTATO PUDDING.—Two pounds of potatoes, boiled and sifted, three-fourths of a pound of sugar, one half-pint of cream, seven eggs, and nutmeg.

TO PRESERVE EGGS.—Set them away in a dry cellar, standing on their ends, and turn the other end up, once a week. They will keep a year fresh.

SUNDERLAND PUDDING.—Six eggs, one pint of cream, a little salt, four tablespoonfuls of flour, and nutmeg. Bake one hour, and eat with sweet sauce.

MAKING HONEY.—Take ten pounds of sugar, dissolved in four pounds of water, two pounds of honey. When cooling, stir in ten drops of peppermint.

CORN CAKE.—Three cups of sour milk, two spoons of flour, two of molasses, a little salt, and corn meal enough to make a batter.

SEED CAKE.—One cup of butter, two cups of sugar, one cup of milk, two eggs, and seed.